PAYMENT FOR PHYSICIAN SERVICES

Strategies for Medicare

Summary

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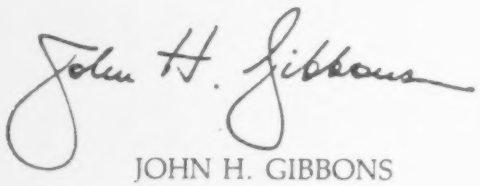
Foreword

Medicare coverage of physician services for elderly and disabled beneficiaries improves their financial access to medical care. But Medicare's payment methods have also fueled increases in expenditures for physician services, which are now one of the most rapidly growing parts of the Federal budget. The method of customary, prevailing, and reasonable charge payment is inherently inflationary and contains incentives for providers to use additional and more expensive services.

To curtail continuing increases in expenditures for physician services, the Deficit Reduction Act of 1984 (Public Law 98-369) froze physician charges to Medicare beneficiaries for 15 months beginning July 1, 1984. That act also mandated OTA to examine alternative methods of paying for physician services in order to guide payment reform. The House Energy and Commerce Committee, the House Ways and Means Committee, and the Senate Finance Committee have jurisdiction over physician services under Medicare and that section of the act. The Senate Special Committee on Aging also requested OTA to study the effect of physician payment methods on the use of medical technology.

In preparing this report, OTA staff drew on the expertise of members of the advisory panel, members of the OTA Health Program Advisory Committee, and experts in medicine, economics, insurance, industry, and health policy. Drafts of the final report were reviewed by the advisory panel, chaired by Dr. Sidney S. Lee; OTA's Health Program Advisory Committee, also chaired by Dr. Lee; and numerous individuals and organizations with expertise and interest in the area. We are grateful for their assistance. Key OTA staff involved in the analysis were Jane E. Sisk, Charles L. Betley, Polly M. Ehrenhaft, Peter McMenamin, Elaine J. Power, Gloria Ruby, Ellen S. Smith, and Kerry Britten Kemp.



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Payment for Physician Services:
Strategies for Medicare

INTRODUCTION

In an era of concern about Federal budget deficits, the growth and size of Medicare expenditures on physician services have made this sector an obvious target for constraining outlays. During the 1980s, Medicare expenditures for physician services have risen at an average rate of 16 percent per year and in fiscal year 1985 reached an estimated $19 billion. For 1985, Medicare's Supplementary Medicare Insurance (Part B) program, which includes physician expenditures,[1] was estimated to be the fourth largest domestic program in the Federal budget, following Social Security, Medicare's Hospital Insurance (Part A) program, and Medicaid[2] (28,42).

Important policy concerns apart from rising Medicare expenditures are at issue. There are indications that medical care is not being provided efficiently—that more or fewer resources than appropriate are being used to manage medical conditions and that the benefits gained from additional services may not be worth their costs. Wide variations exist in the use of physician and hospital services that cannot be explained by differences among populations. Observers have concluded that some technologies, such as vaccines, have been underused. On the other hand, populations with lower use of hospitalization and associated physician services have suffered no apparent ill effects over time (3,18,19).

To some extent, the present situation stems from the fact that medicine is not an exact science. Alternatives exist for the management of many medical conditions, and physicians use their expertise and judgment to determine the medical care for particular patients. Given the discretion that physicians exercise and the lack of definitive information available to clinicians concerning the efficacy and cost-effectiveness of medical technologies, it is perhaps not suprising that there are substantial variations in practice patterns.

But past policies regarding health insurance coverage and payment methods have also played a major role in rising medical expenditures. In general, health insurance dulls the sensitivity of consumers, physicians, and other providers to the financial implications of using medical care With existing levels of cost-sharing, elderly Medicare beneficiaries in general are

[1]Medicare's Part B program covers physician, home health, and ambulatory services. Eligibility for Social Security benefits determines entitlement for coverage of Part A, which pays for hospital and related post-hospital services. People eligible for Part A and U.S. residents over age 65 may enroll in Part B. Enrollees pay a monthly premium, a deductible, and 20 percent of the charges allowed by Medicare. In fiscal year 1984, physicians' services accounted for 85 percent of Part B expenditures (42).

[2]Expenditures for national defense and net interest also exceeded those for Part B in 1985 (30).

likely to be sensitive to the cost of using medical care. But coverage and beneficiary cost-sharing vary across settings and technologies. Both elderly Medicare beneficiaries and their physicians are likely to be less sensitive to the cost of technologies that have more nearly complete Medicare coverage. Routine checkups are statutorily excluded from coverage, for example, while physician services for certain surgery performed in designated ambulatory surgical centers or hospital outpatient settings is reimbursed at the rate of 100 percent of approved charges. Although Medicare's payment policies for ambulatory surgery are intended to encourage physicians and beneficiaries to use less costly settings, in some cases program expenditures for ambulatory surgery have exceeded the amount that Medicare would have paid for an inpatient case.[3]

Overall, Medicare pays 45 percent of the medical expenses of its elderly beneficiaries; this includes 74 percent of their hospital expenses and 55 percent of their physician expenses, but a much smaller percentage of their other medical expenses (41). About 65 percent of elderly people outside of institutions have private insurance to supplement their Medicare coverage. Despite Medicare and other coverage, elderly people still bear substantial medical expenses; in 1984, elderly people spent an estimated 15 percent of their average income on out-of-pocket costs for health care, the same percentage as in 1966 before Medicare was fully implemented (34).

Medicare's traditional payment methods for physician services, like those of other payers, have provided incentives for physicians to provide additional services, regardless of the additional benefit to be gained by beneficiaries. Medicare pays physicians and other Part B providers a fee for each service performed. This fee-for-service payment method places the financial risk for the care provided on the Medicare program and the beneficiary, not on the physician. With fee-for-service payment, physicians have an incentive to perform additional services, provided that the additional revenue they receive exceeds their costs.[4] Because much uncertainty exists in medicine and physicians must exercise discretion in their clinical decisions, there is much room for them to recommend additional followup visits or procedures within the bounds of accepted medical practice.

Medicare's payment rates are based on what physicians have charged in the past, a system that is inherently inflationary. Under Medicare's customary, prevailing, and reasonable (CPR) payment method, the Medicare approved charge[5] is limited to the lowest of a physician's billed charge, the customary charge for that service based on that physician's prior billings,

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[3]On October 1, 1983, Medicare began phasing in a prospective payment system for beneficiaries' inpatient care. Under this system of payment according to diagnosis-related groups (DRGs), Medicare pays a fixed amount based on diagnosis for the operating costs of beneficiaries' inpatient admissions.

[4]"Cost" here refers to the physician's expenses of resources used in the course of providing a service. The physician's cost includes his or her "opportunity cost," that is, the payment that the physician could obtain for other activities, such as performing another service for another patient. In contrast to cost, price or approved charge refers to the revenue that a physician receives for a service.

[5]The terms approved charge, reasonable charge, and allowed charge are used interchangeably to connote the amount that Medicare pays for a specific physician service. After the beneficiary has paid an annual deductible, Medicare pays 80 percent of the approved charge, and the beneficiary is responsible for 20 percent.

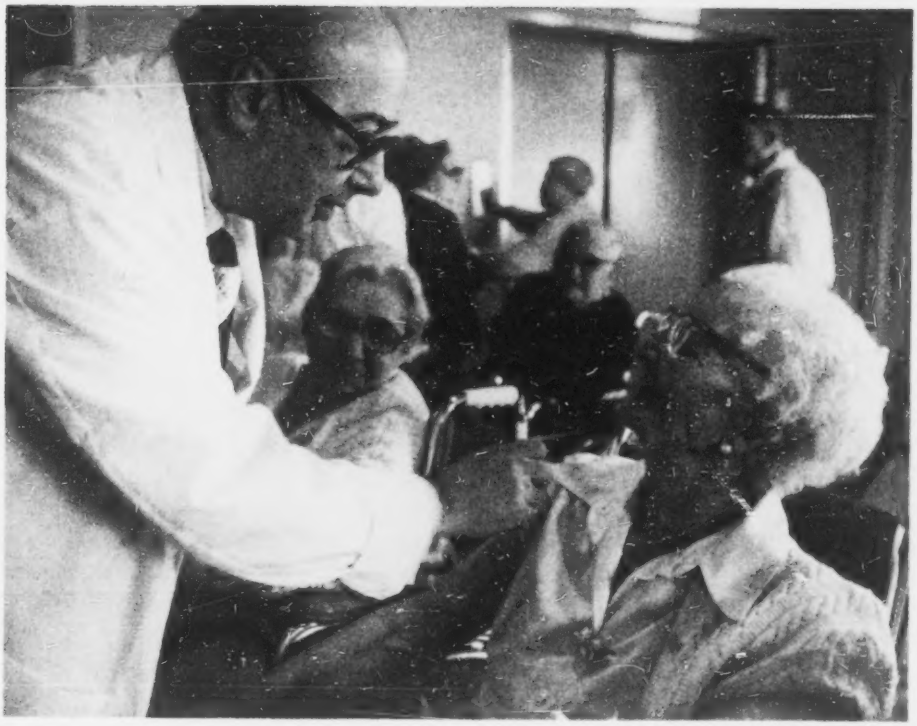


Photo credit: Merck, Sharp, & Dohme

Pneumococcal vaccination, shown here, is the only preventive service covered by Medicare for all beneficiaries.

and the prevailing charge for that service based on comparable physicians' prior billings for the same service. An additional limit on the prevailing charge for a service is set by the Medicare Economic Index, which measures changes in practice expenses and general earnings.

Depending on whether the physician "accepts assignment," either the Medicare administrative carrier[6] or the beneficiary pays the physician. The beneficiary, after having met the annual deductible, is entitled to have Medicare pay 80 percent of the approved charge for a Part B service. If the physician accepts assignment, she or he accepts Medicare's approved charge as payment in full and may collect only the beneficiary's 20-percent coinsurance and any remaining deductible from the beneficiary. If the physician does not accept assignment, the beneficiary is liable for any difference between the physician's actual charge and Medicare's approved charge (the beneficiary's unassigned liability), plus the coinsurance and any deductible.

Since October 1, 1984, physicians have been able to become Medicare "participating physicians" by agreeing to accept assignment for all Medicare claims for the next 12 months. From July 1, 1984 to October 1, 1985,

[6]To administer Part B, Medicare contracts with private organizations termed carriers, which are primarily insurance companies that also have private lines of business.

the customary and prevailing charges of all physicians and the billed charges of "nonparticipating" physicians were frozen. In the absence of passage of Medicare's authorization for fiscal year 1986, Congress in December 1985 temporarily extended the freeze to March 15, 1986.

Like the use of the service as the unit of payment, the structure of relative fees under the CPR payment method has not contained incentives for the efficient provision of medical care. Medicare, as well as most private third-party payers, has historically paid higher rates for urban, specialist, and inpatient services than for rural, generalist, and ambulatory services. Medicare has also rewarded services dependent on equipment more highly than historytaking and counseling.

The Deficit Reduction Act of 1984 (Public Law 98-369), which established the participating physician program and froze physician charges to Medicare beneficiaries, also mandated OTA to examine different ways of paying for physician services under Medicare. The act specified that OTA was to pay particular attention to the following topics: any inequities in relative payments by type of service, locality, and specialty or in relative payments between procedural and nonprocedural services; incentives for providers to accept assignment; the effects of alternative payment methods and levels on the use of services; and possible methods to develop fee schedules. The House Energy and Commerce Committee, the House Ways and Means Committee, and the Senate Finance Committee have jurisdiction over Medicare Part B and this section of the law. In addition, the Senate Special Committee on Aging requested OTA to study the effect of physician payment methods on the use of medical technology.

SCOPE OF THE STUDY

This report uses the term "physician services" for services that are commonly provided by physicians but are sometimes provided by other professionals or organizations.[7] Clinical laboratory tests, for example, may be performed in a physician's office, an independent clinical laboratory, or a hospital laboratory. Similarly, refraction and fitting of corrective lenses may be provided by physicians, such as ophthalmologists, or by other professionals, such as optometrists. Furthermore, some of the alternative payment methods that are considered in this report entail payments for the institutional as well as the physician portion of inpatient care.

This report uses OTA's definition of medical technology: the drugs, devices, medical, and surgical procedures used in medical care, and the organizational and supportive systems within which such care is provided.

[7]The Social Security Act defines "physicians' services" as professional services performed by doctors of medicine, osteopathy, dentistry, podiatry, and optometry; and chiropractors (Section 1861 (r)). In addition, health maintenance organizations and competitive medical plans may furnish the services of certain other health professionals without the direct supervision of a physician: physician assistants, nurse practitioners, and clinical psychologists (50 FR 1351, 42 CFR 417.416).

PHYSICIAN PAYMENT UNDER MEDICARE: PROBLEMS AND CHANGING CONTEXT

The Medicare program is intended to help elderly and disabled people meet their medical expenses. Expressed as the missions of the program, this goal entails promoting the delivery of quality health care services to beneficiaries, making those services accessible to them, and doing so in a manner that is consistent with the cost-effective delivery of services within both Medicare and the general U.S. health care system.

Over the life of the program, *per capita* Medicare expenditures for physician services have risen at roughly the same rate as increases for the United States; however, since 1978 and especially since 1982, per capita Medicare expenditures for physician services have risen more rapidly than expenditures for the Nation as a whole. Although growth slackened in 1984, *total* expenditures for Medicare's Part B program are expected to continue to rise by almost 14 percent per year through fiscal year 1990 (28). Increases in the beneficiary population have accounted for only a minor part of this growth. From 1976 to 1982, Medicare expenditures for physician services for elderly people increased 18 percent per year—2 percent from enrollment increases, 10 percent from price increases, and 6 percent from increases in the number of services per enrollee (9). Claims per beneficiary have risen continuously throughout the history of Medicare, from 1.1 in 1967 to 7.9 in 1984 (37).

There is substantial variation in aspects of Medicare payment, including assignment rates, annual expenditures per beneficiary, and relative rates paid for certain services. This variation, discussed further below, may be indicative of problems regarding quality, access, and efficiency. But substantial variation is to be expected within a national program serving over 30 million beneficiaries in thousands of local markets, and little or no consensus exists regarding whether specific variations signify problems.

Across the United States, assignment rates vary from 17 percent for elderly people in South Dakota to 87 percent in Rhode Island (20). Differences in assignment rates affect beneficiaries' out-of-pocket costs. For the claims of elderly beneficiaries, assignment rates increase with the age of the beneficiary, but for disabled people, assignment rates have been highest for the youngest age group. Assignment rates also rise substantially for higher bills. In general, the data are consistent with the hypothesis that physicians accept assignment more readily when there is a greater risk of incurring a bad debt.

Although Medicare's Part B program is a national program funded through general revenues and beneficiary premiums and deductibles are uniform across the country, Medicare's payments on behalf of beneficiaries vary considerably. Across the United States, there is more than a twofold variation by carrier jurisdiction[8] in Medicare expenditures per beneficiary for physician and other medical services (36). This variation depends on

[8]In fiscal year 1984, the 58 jurisdictions across the United States were administered by 40 carriers.

the proportion of beneficiaries who exceed the Medicare deductible and are thus eligible for reimbursement; that proportion, in turn, depends on variations in health, service volume, physicians' charges, and the stringency with which Medicare carriers determine approved charges.

Compared to beneficiaries in States with high approved charges, beneficiaries in States with low approved charges have to receive more services to meet the deductible and qualify for program payments. On the other hand, for a given volume of services, beneficiaries in States with lower approved charges may have lower out-of-pocket expenses. Even within a national program, provision of a uniform real level of benefits requires that Medicare pay different prices across jurisdictions to reflect different practice costs.

Within States, variations generally reflect disparities in payment levels between urban and rural areas. Under the Social Security Act, Medicare carriers are given discretion in identifying localities for payment purposes. Because of this carrier discretion, the entire State is the locality for 18 States, while Michigan has 2, Pennsylvania has 4, and Texas has 32 localities. Across localities, the range in charges for specific services is often great. In 1980, the highest prevailing charge exceeded the lowest by 159 percent for cataract removal and by 536 percent for chest X-rays (33). Even after adjustment for cost-of-living differences, great variations continue to exist, but the costs of operating practices of equivalent size and style are not available. To the extent that differences in approved charges exceed differences across local market areas, reducing the number of localities for charge determination is a reasonable goal.

Carriers also differ across the United States in their use of physician specialty to determine approved charges for services. Four carriers make no distinction among physician specialties (31), while the carrier for Pennsylvania has had 58 different groups. For many services, prevailing charges are specialty specific regardless of carrier policy, because one specialty typically performs a certain procedure. Few cataract removals, for example, are performed by physicians who are not ophthalmologists. Specialty-specific determinations may have the most effect on approved charges for physician visits, which are performed by many different specialties and account for about half of all physician services provided to beneficiaries. The justification for recognizing higher approved charges for specialists compared to generalists is that specialists provide either higher quality or different services. Some evidence suggests that higher quality care is provided by physicians practicing in the area of medical care for which they were trained (so called "modal specialists") (26). The difficulty arises in determining in specific cases when services, mainly visits, performed by specialists and generalists constitute similar services and when a specialist or generalist is the modal specialist and deserves higher payment. There is no empirical literature to guide determinations for specific cases.

Medicare payment for physician visits also varies by the site of service, with a hospital visit paid more than a nursing home visit, and a nursing home visit paid more than an office visit. In 1982, average prevailing charges

Photo credit: American College of Physicians, HEALTHSCOPE film series

The lack of additional payment for primary-care services such as counseling and historytaking contrasts sharply with the additional payment for services, such as interpreting electrocardiograms, that depend greatly on medical devices.

were 11 to 32 percent higher for inpatient visits than for office visits. Since physicians do not pay hospitals for the use of their facilities, these differences suggest an incentive for physicians to favor the hospital as the site of care. However, the nomenclature of physician services may be misleading in this instance. A limited inpatient visit may differ from a limited office visit because inpatients are usually sicker and may require more physician time and skill.

Large differences appear to exist in relative approved charges for procedural services such as endoscopy, which depend in a major way on the use of medical devices, and nonprocedural services such as office visits, which use medical devices only incidentally.* One study reported that after adjustment for such factors as training, resource cost, and service complexity, physicians were paid as much as four to five times more per hour for inpatient surgery than for office visits (15). Within the office, the lack of additional payment for such primary-care services as historytaking or nutritional counseling contrasts sharply with the additional income that can be generated from, for example, providing laboratory tests, interpreting an electrocardiogram, or performing an endoscopy. In office practice, pay-

*Although procedural services are often referred to as cognitive services, both procedural and nonprocedural services use cognitive skills.

ment rates are such that physicians might realize greater net incomes from performing an additional diagnostic test than from seeing an additional patient.

The establishment and maintenance of high payment rates for equipment-embodied and surgical technologies may have contributed to payment differentials between procedural and nonprocedural services. Many technologies are priced high when new because they are complex and requre special skills to perform. Even if over the years the required physician time and other resources decline and the necessary skills become more commonplace, the initial price is maintained.

Differentials in Medicare payment rates for certain services raise the concern that they may be affecting the quality of care received by beneficiaries and the cost of care paid by Medicare and beneficiaries. Differences in net revenue to providers would be most likely to influence medical decisions for which the medically and ethically correct choice is unclear. The comparison involves both the net revenues from services that are substitutes for a particular patient and the physician's opportunity costs of providing services to another patient. In the case of a beneficiary who has private supplementary insurance to cover cost-sharing, the additional cost to the patient of a diagnostic procedure, such as endoscopy, may be negligible. Since the test may provide useful information and requires little time, the increase in revenue to the physician of several hundred dollars may be a strong incentive to perform the test.

Currently, beneficiaries may find it harder to obtain nonprocedural than procedural services. There is evidence that carriers have paid a lower percentage of billed charges for visits than for surgeries (16), that assignment rates have been lower for primary-care specialties than for surgical ones, and that beneficiary out-of-pocket payments have been a larger part of revenue associated with the Medicare program for primary-care physicians than for surgeons and radiologists (16). There is no indication, however, that beneficiaries' health has suffered from lack of access to primary-care services.

Variations in payment rates also result from the application of the Medicare Economic Index. The effect of the index varies greatly, depending on the services and specialty. In 1980 in California, the index affected almost no payments for eye exams from ophthalmologists, but affected almost all payments for basic anesthesiology services from anesthesiologists (11). On the other hand, by capping prevailing charges in urban areas, the index in effect prevented urban-rural differentials from increasing (25).

The changing context of medical practice adds other considerations to an analysis of Medicare's payment policies. In recent years, physicians have felt under greater competitive pressure. In part, this sense may have come from the increases in physician supply, which has grown rapidly over the past decade and is expected to outstrip requirements for additional physician services for the rest of the century. The sense of greater competition may also have come from activities of employers to contain increases in health insurance premiums and of Federal and State governments to moderate increases in their health care expenditures.

Perhaps in response to these changing circumstances, innovative practice arrangements are burgeoning, and physicians are increasingly entering organizational and payment systems, such as prepaid group practices, individual practice associations, and preferred provider organizations (PPOs), that differ from traditional fee-for-service solo practice in utilization controls, payment methods, and benefit design. Although these organizations usually exert more control over the availability and use of resources than physicians would experience in solo practices, physicians in these organizations gain greater predictability in patient load, income, and practice hours. As a result of prospective hospital payment systems that Medicare and several States have adopted in recent years, hospitals have new incentives to reduce inpatient operating costs. Cutbacks in lengths of stay appear to be affecting the inpatient services that physicians perform, but payment for services in the ambulatory settings including physicians' offices has remained relatively unconstrained.

Greater Medicare expenditures can be expected as the increasing supply of physicians enables the growing demand from more numerous and more elderly beneficiaries to be realized. Because of the increasing supply of physicians, however, these providers may be more willing to accept lower prices for their services and lower increases in their incomes. To the extent that competition would lead physicians to moderate their billed charges, Medicare's present CPR system would permit the program and its beneficiaries to benefit from lower costs. But under CPR, Medicare could also experience increases in use and expenditures if physicians chose to maintain their incomes in the face of greater competition by increasing the discretionary use of services or if beneficiaries demanded more services in response to lower charges.

Recent changes in legislation and regulation have made participation in Medicare more attractive to risk-sharing health maintenance organizations (HMOs) and other competitive medical plans (CMPs), and beneficiary enrollment in HMOs mushroomed during 1985. Nevertheless, it appears that Medicare has not fully taken advantage of opportunities in the marketplace. Despite the fact that beneficiaries account for a large share of certain physician services, Medicare uses a standard formula to determine approved charges and has not attempted to negotiate discounts. Although the determination of approved charges might be considered a form of quantity discounting, one might expect greater reductions for services provided primarily to beneficiaries, such as cataract surgery. Medicare also lacks arrangements with PPOs, organizations that contract with physicians and sometimes hospitals to provide services at lower than usual rates on the expectation that patient load will be greater.

Review of Medicare's payment of physician services raises questions regarding the quality, accessibility, and efficiency of beneficiaries' medical care. It is clear that Medicare expenditures for physician services are currently unpredictable and lie largely outside the control of the program and its beneficiaries. Using fee-for-service as the method of payment and CPR as the basis for determining approved charges has been associated with con-

tinual increases in claims per beneficiary and in recent years with more rapid expenditure increases for Medicare than for the Nation as a whole. Nor does the pattern of variations in approved charges among services appear consistent with incentives for providers to deliver good quality care in an efficient manner. There is also no question that variations in payment levels have led to confusion among providers about the approved charges that they may expect for a service and among beneficiaries about their out-of-pocket expenses.

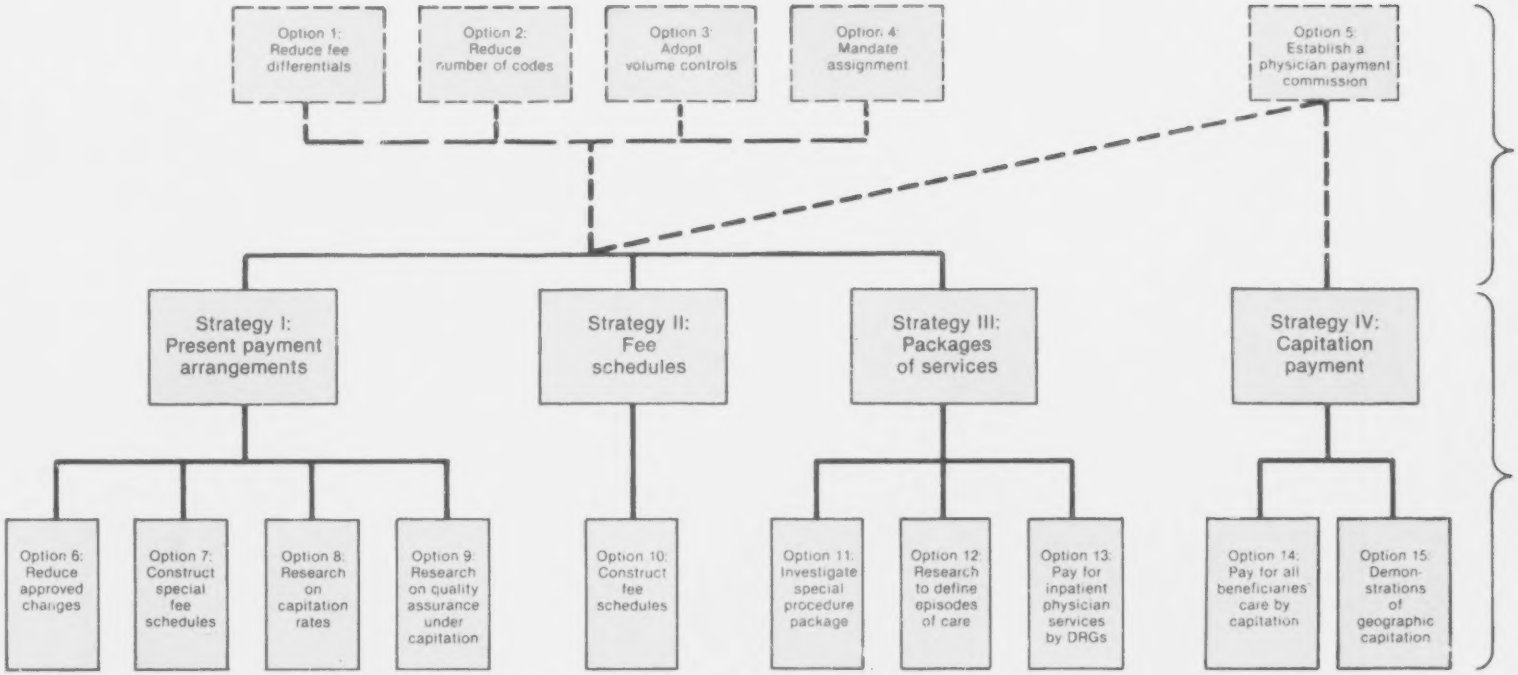
POLICY OPTIONS

To address the problems identified with Medicare's current system of paying for physician services, Congress could undertake four different strategies, depending on the payment method that Congress ultimately wished to adopt for Medicare (see figure 1). The first strategy would retain CPR as the mainstream payment method, but continue other payment methods in specific circumstances, such as capitation payment for beneficiaries who elected to enroll in HMOs. A second strategy would replace the CPR payment approach with payment based on fee schedules. The third strategy could be adopted if Congress wished to explore the strategy of moving to payment for packages of services on a wide scale. Under the fourth strategy, Medicare would pay for all beneficiaries' medical care by capitation payment. In addition to the four strategies, a set of general options addresses problems that are likely to continue under all of the payment alternatives that continue payment for individual or packages of services, that is, for all of the alternatives except capitation payment (see figure 1).

The four sets of payment alternatives vary with respect to the unit on which medical care is based. Two of the alternatives, modifications to CPR payment and payment based on fee schedules, would continue the individual service as the unit of payment. Payment for packages of services would involve grouping related services, such as all services associated with an ambulatory visit or a special procedure, and paying for them as an aggregate unit; thus, payment under the packaging approach is also based on the services provided. Capitation (per capita) payment would base payment on the number of beneficiaries enrolled in a plan. The payment alternatives take the perspective of the Medicare program and concern how Medicare could pay for physician services rather than how physicians receive payment for their work. Thus, for example, Medicare might pay an HMO a capitation payment for providing physician services to beneficiaries, but the HMO organization in turn could pay physicians on a different basis, including salary, fee-for-service, or some combination.

In addition to varying by the unit of payment, payment for physician services varies by the level of payment and the relative rate structure. All of these aspects may affect physicians' and beneficiaries' decisions about the use of specific services and total expenditures for medical care. Regardless of the unit of payment, the recipient increases revenue by increasing those units, whether they be individual services, packages of services, or beneficiaries as enrollees. It is in the financial interest of the recipient to

Figure 1.—Congressional Options for Medicare Payment of Physician and Other Services


Option 1: Reduce fee differentials
Option 2: Reduce number of codes
Option 3: Adopt volume controls
Option 4: Mandate assignment
Option 5: Establish a physician payment commission
Strategy I: Present payment arrangements
Strategy II: Fee schedules
Strategy III: Packages of services
Strategy IV: Capitation payment
Option 6: Reduce approved charges
Option 7: Construct special fee schedules
Option 8: Research on capitation rates
Option 9: Research on quality assurance under capitation
Option 10: Construct fee schedules
Option 11: Investigate special procedure package
Option 12: Research to define episodes of care
Option 13: Pay for inpatient physician services by DRGs
Option 14: Pay for all beneficiaries' care by capitation
Option 15: Demonstrations of geographic capitation

[a]Dashed lines indicate that the strategies below are possible with or without the adoption of these general options.

SOURCE: Office of Technology Assessment.

increase the number of units only if an additional unit adds more to revenue than to costs, including the opportunity cost of using resources in other uses. And that situation depends on the level of payment and the relative rates paid for other units.

The payment alternatives in this assessment have been evaluated for their implications for quality of care; access to care, both financial and geographic; costs and efficiency; technological change; and administrative feasibility. The effects of alternative methods of paying for physician services are difficult to predict because of uncertainty regarding physicians' behavior, especially in the context of the present medical marketplace. Faced with a decrease in the fee for a service, physicians might respond like most suppliers and reduce the volume of services that they were willing to provide. Because of that effect, reductions in approved charges could lead to reductions in Medicare expenditures. But the possibility has been raised that physicians can induce demand for their services. In that case, total Medicare and beneficiary expenditures could rise even with a decrease in price, and utilization control would be needed to control expenditures under fee-for-service payment. Although studies have found that public health insurance programs that froze or reduced physician fees did not control expenditures, the empirical work is not definitive because of concomitant changes in relative charges paid by other third-payers or because of the possibility that beneficiaries may have increased their demand for services in response to lower prices.

In the dynamic situation of increasing physician supply, physicians' behavior is even more difficult to predict. Physicians are increasingly entering innovative practice arrangements that control their use of services and incomes and may be more willing to accept lower prices for their services and lower increases in their incomes. On the other hand, physicians in the United States and Canada have maintained their income levels even in the face of substantial increases in physician supply (1). It is possible that physicians would respond to general restrictions on payment rates by increasing the use of certain services, such as laboratory tests, and billing for more highly priced visit categories. In fact, such behavior may already be occurring. From 1977 to 1982, physician billing for hospital and office visits shifted markedly from lower priced categories, such as followup and generalist visits, to higher priced categories, such as initial and specialist visits (9).

Another thorny issue concerns assignment. The relationship between assignment rates and access of beneficiaries to medical care is not clear cut; access is not synonomous with assignment. Although assignment is intended to improve beneficiaries' financial access to care, it is possible that a beneficiary could have lower out-of-pocket expenses for services from a physician who refused assignment than from a physician who took assignment but had higher approved charges. In addition, some physicians who refuse assignment may not pursue the beneficiary for his or her unassigned liability. There are no documented problems with beneficiaries' access to care at present assignment rates. In fiscal year 1985, 30 percent of physicians who bill Medicare elected to become participating physicians (to take as-

signment for all claims). Assignment on a case-by-case basis has been rising since the low point in 1976, when it was 50.5 percent of claims and 47.6 percent of charges (33). In fiscal year 1985, including participating physicians, the assignment rate reached 67.7 percent of claims and 67.4 percent of charges (39). Despite the uncertainty about the desirable level of assignment rates, it is reasonable to conclude that an increase in assignment rates will improve access and a decrease will reduce access for some beneficiaries.

A related issue is physicians' willingness to accept assignment. The higher Medicare's approved charge in relation to a physician's billed charge, the more likely that physician is to accept assignment (22), the more services are likely to be provided to Medicare patients per capita, and the greater is the number of Medicare patients likely to be treated by that physician (12). Early information on physicians who choose to become participating physicians for fiscal year 1985 indicates that previous assignment rates and the percentage of the usual fee paid by Medicare were the most important economic variables associated with the decision to participate (6). If, as is likely, changes in Medicare payment of physician services affected the approved charges of physicians, assignment and participating physician rates would be expected to decrease in instances where approved charges had decreased and to increase in instances where approved charges had increased. The effects on beneficiaries' out-of-pocket expenses would be conflicting. A beneficiary whose physician's approved charges declined would have lower coinsurance liability. But since that physician would be less likely to take assignment or become a participating physician, the beneficiary would be likely to face higher unassigned liability. One would expect that the change in unassigned liability would be greater than the change in coinsurance.

General Options

Reducing differentials in payment among certain services, reducing the number of codes for payment purposes, adopting other controls over volume of services, and mandating assignment are four general options that would be consistent with payment alternatives that continue to base payment on individual services or packages of services provided. Issues concerning volume of services and mandatory assignment would become more pressing if Medicare placed greater constraints on the prices paid for physician services by reducing the level of approved charges under CPR or adopting payment based on fee schedules or packages of services. Although the other four general options would be diversions on a path to capitation payment, a fifth general option, establishing a commission to advise on physician payment reform, could be consistent with either capitation or the other payment alternatives.

Option 1: Mandate the Medicare program to reduce or eliminate differentials in payment in one or more of the following categories:

- **approved charges within States,**

- **similar services provided by generalists and specialists,**
- **comparable services performed in different sites of care, and**
- **nonprocedural services (primarily visits) vs. procedural services.**

To address perceived imbalances in Medicare payment, the approved charges for the higher priced services (urban, specialist, inpatient, or procedural) could be reduced with or without raising the approved charges for the lower priced services (rural, generalist, ambulatory, or nonprocedural). In the course of reducing the variation in approved charges between procedural and nonprocedural services, Medicare could adjust approved charges for technologies whose costs have decreased over time. Medicare could also periodically review and adjust approved charges for such technologies.

Reducing the approved charges for the higher priced services would decrease assignment rates for and beneficiaries' financial access to these services. Services such as magnetic resonance imaging (MRI), which are provided by only a few physicians who have non-Medicare as well as Medicare patients, would be less accessible to beneficiaries if Medicare's payment level was much below that of private insurers. Access to lower priced services would be likely to increase if their approved charges were raised.

Assignment rates are likely to fall least for physicians, such as radiologists, general surgeons, ophthalmologists, and orthopedic surgeons, whose approved charges are currently the least constrained by prevailing charge

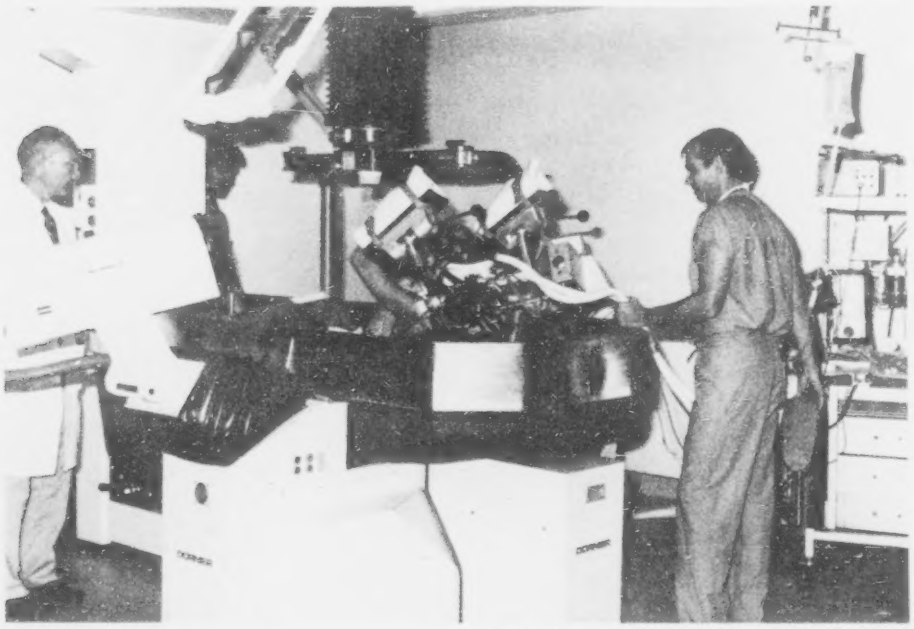


Photo credit: University of Virginia Medical Center

Medicare payment rates for expensive new technologies, such as extracorporeal shock wave lithotripsy (ESWL) being performed here, have tended to remain at their initial levels or rise, even if the costs of resources have declined.

limits. Specialists for whom approved charges have been most constrained by prevailing charge limits, namely general practitioners, family physicians, and internists, could benefit from increases in relative payment rates for nonprocedural services. However, lowering payment rates for procedural services would affect internists whose practice involves the substantial performance of procedures such as gastroendoscopy.

There is some overlap between past levels of assignment and the extent to which prevailing charges constrained a specialty's approved changes. Radiologists have had higher assignment rates and less constraint from prevailing limits, but psychiatrists, pathologists, and pediatricians have also had high assignment rates (4). General practitioners and family physicians, with approved charges most limited by prevailing charges, have had some of the lowest assignment rates. Other specialists that have had low assignment rates are allergists, surgical specialists, and anesthesiologists (4). Medicare might exert greater leverage over physicians with a larger proportion of their practice revenue from Medicare payments. In that case, thoracic surgeons, internists, radiologists, and general surgeons would be most affected by changes in approved charges and gynecologists, psychiatrists, plastic surgeons, family physicians, orthopedic surgeons, and general practitioners the least affected (24).

Overall, lower approved charges would be likely to affect least the assignment rates of pathologists, radiologists, and some of the surgical specialists. Whether an internist's approved charges and hence assignment rate would rise or fall would depend on a particular physician's location and pattern of practice. Internists have been dependent on Medicare revenue, but have also had their approved charges more constrained by prevailing charge limits. Although the approved charges of general practitioners and family physicians have been highly constrained by prevailing charge limits, these specialties are also less dependent on Medicare revenue.

How this option would affect quality of care is unclear. Besides effects on quality through changes in access, changes in quality would depend on the appropriate level of specific services, which is often not known. If the use of procedural services, such as electrocardiograms, is being unduly stimulated by present payment rates, lowering approved charge levels would improve quality. The quality implications of reducing differentials for similar generalist and specialist services are further confounded by the unresolved issue of whether specialists provide higher quality care than generalists. Specialists appear to provide higher quality care when practicing within the domain of their advanced training. But the evidence that physician performance per se is related to specialization is weaker and contradictory.

The effect of this option on Medicare expenditures would depend on the changes in volume of services in response to the changes in prices, a subject that is still a matter of debate. If the volume of services provided to Medicare beneficiaries did not increase, lowering approved charges for relatively high-priced services without increasing those for relatively low-priced services would decrease total Medicare expenditures. However, if the response of physicians or beneficiaries raised the volume of services used,

Medicare expenditures could rise. The effect on total Medicare expenditures of increasing approved charges for lower priced services while lowering approved charges for higher priced services is indeterminate.

With lower approved charges and no volume changes, beneficiaries' out-of-pocket expenses in the absence of mandatory assignment would increase because of lower assignment rates and greater unassigned liability, but their costs would decrease because of lower coinsurance. Since the increase in unassigned liability is likely to be greater than the decrease in coinsurance, beneficiaries' total expenses would increase. In cases where approved charges for lower priced services were raised, the decrease in unassigned liability would most likely exceed the increase in coinsurance, with the result that beneficiaries' total out-of-pocket costs for that service would decrease.

Physicians whose approved charges were lowered would be unlikely to raise their charges to non-Medicare patients. But these physicians would be likely to shift their time and provision of services to other patients for whom physician time was more highly paid. If approved charges were reduced to levels significantly below those of the non-Medicare market, physicians might choose not to participate in the Medicare program.

Option 2: Mandate the Medicare program to reduce the number of procedure codes used to pay for physician services.

The multitude of procedure codes for payment purposes (7,040) includes different codes for services that have only minimal distinctions. For example, office visits have 11 codes (new patient: brief, limited, intermediate, extended, comprehensive; established patient: minimal, brief, limited, intermediate, extended, and comprehensive), and some particular procedures, such as chest X-ray, have many categories based on very fine differences in actual technology. This situation enables physicians to upgrade their billing codes. Physicians may also bill separately for services such as laboratory tests instead of including them within the office visit charge.

Medicare could reduce the number of categories for visits and procedures such as colonoscopy by combining codes that differ in only minor ways. New payment rates could be constructed from a weighted average of the historical charges for all related codes or on the fee for the code used most frequently. Once new categories were established, codes could be collapsed at either the carrier level (allowing physicians to continue to bill with present codes) or the physician level (requiring physicians to bill using new codes). A variation, which is used in Quebec, would include payment for simple laboratory tests in the rate for office visits.

The experience in Quebec since the mid-1970s suggests that reductions in the number of codes would be likely to moderate the rate of growth in Medicare expenditures for physician services (1). With fewer codes for similar services, physician would be less able to upgrade their billing to more expensive codes. Providers would be likely to find this option acceptable, because they could continue to bill for specific services, perhaps even with the same codes. Since the reduced number of codes would still reflect differ-

ences among visits or other services, physicians would be unlikely to change their use of services in such a way that total expenditures increased.

Collapsing codes would entail raising payment for some codes and some physicians and lowering payment for others. Similarly, some beneficiaries would have higher or lower cost-sharing than in the past. If the 13 present colonoscopy codes were collapsed into 2, for example, the approved charge and beneficiaries' cost-sharing would be greater for colonoscopies of a short distance into the colon.

Option 3: Mandate the Medicare program to develop and adopt controls over the volume of physician services billed under CPR, fee schedules, or packaging.

About half the increase in Medicare physician expenditures has been related to changes in the intensity or quantity of physician services. Although approved charges for some services are capped under CPR through the use of the Medicare Economic Index, service volumes in the aggregate are virtually unconstrained.

Utilization controls under Part A of Medicare have a long history. Utilization review was a condition of participation for hospitals in the original Medicare regulations. In 1972, professional standards review organizations (PSROs) were mandated to review hospital utilization. PSROs have now been supplanted by the utilization and quality control peer review organizations (PROs) mandated under the Part A prospective payment system. For Part B, carriers are required to establish prepayment screens to detect potentially implausible combinations of claims for a single physician's services to a particular patient, such as multiple consultations during a hospitalization or followup office visits within 2 to 4 weeks of a major surgery. But there are no uniform, nonexperimental means to assess the appropriateness of aggregate service volumes.

Some observers believe that additional or more formal utilization controls are warranted with respect to physician services provided to Medicare beneficiaries. The substantial variations in the use of specific services have been cited as an indication that excessive amounts of some services are being provided in the high use areas. Fee-for-service payment contains incentives to provide additional services even if they provide minimal benefit to patients. Especially in the face of lower approved charges, some physicians might increase the volume or intensity of services billed to Medicare. Monitoring or controlling specific services would respond to the concern about variations in use, but a more encompassing utilization review program would respond to the concern about more pervasive use increases.

Monitoring might take the form of more elaborate physician profiles that would focus on utilization patterns by specific physicians in addition to the current profiles that focus primarily on charges. These profiles might be refined to examine patterns of practice including all physician services provided or ordered in the treatment of particular diagnoses. One might

want to reexamine the results from the evaluation of the Experimental Medical Care Review Organizations or the utilization review programs of certain individual practice associations to assess the relevance of such approaches for the Medicare program. As discussed in option 2, collapsing codes could control volume of services billed by inhibiting billing of more highly paid categories or by inhibiting performing additional ancillaries if they were included in visits.

If excessive use of services were verified, strengthened controls could be mandated. These might include mandatory prepayment screens to be implemented by Medicare carriers for specific physician services using national parameters to detect potential overuse. If certain relatively costly services were found to be overused, a pretreatment authorization requirement could be introduced. PROs might be given the option to review physician services provided to hospitalized Medicare beneficiaries, which account for 61.9 percent of all Medicare approved charges for physician services (4). But given the existing PRO review of the associated hospital services and the hospitals' own incentives to reduce the provision of marginally useful ancillary services, additional efforts to review physician services provided in hospitals might not be warranted.

Physician services provided on an ambulatory basis would provide a more fruitful realm for review by PROs or others, especially if service volumes increased in response to relative reductions in approved charges. A report on volume and case-mix changes under the Medicare fee freeze was mandated for 1985. An examination of this report might highlight the potential use of carriers for monitoring utilization changes under fee schedules. Alternatively, the Health Care Financing Administration (HCFA) might reinstitute research and demonstrations on new approaches to ambulatory medical care review.

Under CPR payment, controlling use without additional controls on price might fail to control total Medicare expenditures if providers were able to increase their billed and hence approved charges over time. With payment based on fee schedules or packages of services, Medicare would have more control over payment rates.

HCFA might explore the use of an expenditure cap as a means of controlling utilization and total expenditures. This approach has been used in both the Federal Republic of Germany and in Quebec, with revenue limits placed on individual physicians or on groups of specialists. More research on this approach would be needed, however, because there is no consensus on whether this type of approach has reduced utilization or the rate of growth of expenditures. Furthermore, in contrast to the situation in Germany and Quebec, Medicare is one of several sources of physician revenue. The administrative feasibility and other implications of an expenditure cap under Medicare would have to be evaluated in this different context.

Option 4: Mandate the Medicare program to require physicians to accept assignment in order to receive payments from the program.

Although no available data indicate that beneficiaries' financial access to care is limited by current assignment policies, there is justifiable concern that lowering approved charges under CPR or under a fee schedule would reduce assignment rates and reduce beneficiaries' financial access to care by raising their out-of-pocket expenses.

Continuing case-by-case assignment would be inconsistent with payment for packages of services, which are intended to put coordinating physicians or other recipients of payment at financial risk for the cost of resource use. If providers could take assignment on a case-by-case basis, they would do so only for cases whose costs were likely to fall below the packaged rate paid by Medicare. For cases whose costs were likely to exceed the packaged rate, physicians would refuse assignment and bill higher charges to the beneficiary, thus transferring the financial risk back to the beneficiary.

Medicare could mandate assignment for all services, either as individual services or as packages of services, paying neither the physicians who did not take assignment nor the beneficiaries who used their services. Or Medicare could limit mandatory assignment to selected services or packages over which it has market power, such as for inpatient services or cataract surgery. Another alternative would be to adopt all-or-nothing participation, which differs from mandatory assignment in that beneficiaries would still be paid at the level of Medicare's approved charges if they used physicians who did not take assignment.

As discussed in option 1, the extent to which prevailing charges have limited a specialty's approved charges, the proportion of practice revenue derived from Medicare patients, and the level of past assignment rates might predict whether particular specialists would accept Medicare patients under mandatory assignment or would accept assignment under all-or-nothing participation. On these grounds, general practitioners and family physicians would be the least likely to accept assignment under the new policies, and radiologists, pathologists, and general surgeons would be the most likely to accept assignment. That internists' approved charges have been highly constrained by prevailing charge limits would predict that they would be less likely to accept assignment under the new policies, but Medicare also accounts for a substantial portion of their practice revenue.

Although the effect of mandatory assignment on Medicare expenditures would depend on the approved charges and volume response of physicians who continued to take beneficiaries as patients, it is likely that within a specialty physicians with lower approved charges would continue to participate and that Medicare expenditures would rise less rapidly in the short term. Mandatory assignment could reduce beneficiary out-of-pocket expenses and increase beneficiary financial access if physicians with lower ap-

proved charges remained in the program. But beneficiary access would be reduced to the extent that physicians refused to participate in Medicare. Under all-or-nothing participation, Medicare expenditures would remain the same, but beneficiaries' out-of-pocket expenses would depend on the approved charges of physicians who accepted assignment and on the extent to which physicians who refused assignment billed beneficiaries above the level of approved charges. The effect on other payers would depend on the extent to which physicians whose revenues from Medicare beneficiaries were lowered shifted their practice time and provision of services to other patients.

With regard to mandatory assignment for packages of services, neither the Medicare program nor the Medicaid program has had experience with assignment related to paying a coordinating physician. Such a role would be new for physicians other than those who have functioned as case managers. Acting in this capacity would require physicians to develop different professional relationships and would entail additional paperwork and coordination by the primary physician. Although coordinating physicians would have a limit on payment received, other physicians providing services to patients might wish to "bill" the attending at higher rates than the package could bear. Unless the risk was shared among physicians or with Medicare, many physicians might refuse to participate in the program. Paying a group of physicians or the medical staff of a hospital would be less of a novelty for physicians who had participated in group practices or individual practice associations.

Option 5: Establish a physician payment commission to review potential changes in payment methods and to monitor changes implemented.

A consensus is developing that supports reforms in Medicare's methods of paying for physician services. But even if a method was adopted that could be implemented quickly, such as construction of fee schedules from historical charge data, critical technical and clinical issues would remain to be decided, including relative fees for types and sites of services and a process for updating scheduled fees and reweighting selected fees. Movement over a longer period to other payment systems, such as per-case payment for inpatient physician services or mandatory capitation payment, would require similar technical expertise.

This option would establish a physician payment commission to advise HCFA about such physician payment changes. The Medicare Reconciliation Act, H.R. 3128, which was approved by House-Senate conferees of the 99th Congress, contained such a provision. Like the Prospective Payment Assessment Commission created in connection with Medicare's prospective payment system for inpatient services, a physician payment commission could consist of people from disciplines and perspectives that have an interest in the issues (such as beneficiaries, physicians from different areas of medicine, and other health providers and organizations likely to be affected) and that have technical expertise that is important to incorporate in policy decisions (such as economists and insurers).

A physician payment commission could provide technical and clinical advice that HCFA would need to make informed decisions. The commission could also serve as a conduit for the views of parties, such as physician associations, insurers, and HMOs, that would be affected by physician payment reform.

Even if such a commission was not established, HCFA could obtain technical and clinical advice from relevant individuals and organizations. Furthermore, policymakers would still have to evaluate the recommendations made by the advisory group. It could also be argued that the advice of a physician payment commission would be more valuable after the course of payment reform was set, when such a commission could make recommendations about implementation, refinements, and updates.

Continuation of Present Payment Arrangements

The options presented below could be adopted in the short term under a strategy to continue CPR as the mainstream payment method but to refine other existing or related payment methods. Within this set of options, Congress could emphasize measures related to fee schedules or capitation payment if it were interested in moving Medicare payment in that direction.

Option 6: Mandate the Medicare program to reduce approved charges under CPR by one of the following methods:

- lowering the percentile at which prevailing charges are calculated,
- reducing the frequency of updating charges by freezing charges, and
- giving beneficiaries the option of receiving care from preferred provider organizations (PPOs).

This option is intended to reduce the rate of increase in Medicare expenditures by reducing Medicare's approved charges. But any program savings produced by lowering the percentile at which prevailing charges are calculated would be diluted over time because physicians could raise their approved charges by raising their billed charges. Furthermore, the effects of the first two approaches on Medicare expenditures are difficult to predict because of uncertainty surrounding the change in volume of services that would be associated with reductions in approved charges.

Beneficiaries' unassigned liability would increase as physicians' assignment rates fell in reaction to lower approved charges and would most likely exceed decreases in coinsurance. As in the case of other measures to reduce approved charges, the effect on other payers would depend on the extent to which physicians shifted their provision of services to non-Medicare patients.

Giving beneficiaries the option of receiving care through PPOs would enable Medicare to take advantage of the increasingly competitive marketplace. Medicare could contract either directly with providers or indirectly with PPO organizations or insurers for payment below the level of approved charges. Medicare could encourage beneficiaries to use PPO physicians by reducing cost-sharing or premiums. Consistent with the concept of induced

demand, physicians joining a PPO might expect to counteract lower Medicare payment rates with greater volume of services. To address this concern, utilization control could be undertaken by either the PPO or Medicare.

In the absence of greater use of services, beneficiaries who used PPO providers would have lower out-of-pocket expenses. Reductions in the deductible or coinsurance rate for using PPO physicians might entice beneficiaries to exercise the PPO option. Many beneficiaries have private supplementary insurance that covers Medicare cost-sharing amounts, but some might welcome the chance not to pay premiums for private insurance. Although reducing Medicare premiums would be an attractive financial incentive to beneficiaries, beneficiaries would then be required to receive care only from PPO providers.

Option 7: Mandate the Medicare program to pay for specific services according to fee schedules.

A mixed option might involve the use of fee schedules only for services with certain characteristics. In particular, services that are believed to be widely and consistently available at relatively homogeneous prices or, alternatively, "referred" services provided to hospitalized beneficiaries might be paid through the use of a fee schedule. In the case of anesthesia services, for example, most beneficiaries have little or no role in selecting an anesthesiologist, and little opportunity to search for one that might be available at a relatively low price. For this reason, a single approved charge could be established for the professional components of radiology, anesthesiology, and pathology—and any others—involved in providing services to hospitalized beneficiaries.

This approach has the virtue that it could be quickly implemented, particularly with respect to those services deemed widely and consistently available. Waiting for the completion of analyses covering all 7,040 procedures would not be necessary. The difficulty would be in the reaction of those physicians who are affected by this policy and receive lower approved charges. Referral physicians would be less able to increase volume of services in response to lower payment rates because they are dependent on other physicians' referring patients. Affected physicians might refuse assignment for such services, in effect, placing the burden of the reductions on the beneficiaries. If this problem occurred, this option might be amended to mandate assignment for all services provided under the fee schedule. As discussed in option 4, radiologists and pathologists are among specialists most likely to participate under mandatory assignment.

Option 8: Mandate the Medicare program to increase its funding of research and demonstrations on the construction and use of rates for capitation payment.

Increased beneficiary enrollment in plans paid by capitation has the potential to help control Medicare expenditures. A major impediment to the realization of this potential is the lack of well-developed methods for ad-

justing capitation rates to the likelihood that a beneficiary's care will be expensive or inexpensive. Without an appropriate adjustment for risk, capitation payment could give plans a financial incentive to enroll low-risk beneficiaries and to shun high-risk ones. In those circumstances, expenditures of the Medicare program might even rise if high-cost beneficiaries remained in traditional arrangements and Medicare paid greater amounts than otherwise for low-risk beneficiaries.

This option would mandate HCFA to increase research on risk-adjusted capitation rates and to test different approaches in demonstration projects. Further research and demonstrations would permit HCFA to ascertain whether additional adjustments to the adjusted average per capita cost (AAPCC) for health status, such as the presence of certain conditions that are expensive to treat, or other approaches, such as competitive bidding or risk-sharing arrangements with Medicare, would be feasible and advisable. Diagnosis-related group (DRG) categories were based on diagnostic information that hospitals had been recording for decades. Risk adjustors for capitation payment must relate to beneficiaries' use of a much broader range of medical care, and there is no accepted classification system for this task.

HCFA is currently sponsoring some extramural and intramural research on refining the AAPCC used for payment to risk-sharing plans (40). Increasing that research would draw funds from the budget for HCFA's Office of Research and Demonstrations, a budget that has been reduced in recent years. If this option was not adopted and such research was maintained at existing levels, policymakers could make decisions on the basis of research and demonstrations that are now underway and could respond empirically to any problems as they arose with new techniques.

Option 9: Mandate the Medicare program to fund demonstrations of alternative techniques for quality assurance under capitation payment.

Although studies of non-Medicare enrollees in HMOs have concluded that HMOs have provided care equal to or better than that provided by comparison groups, the financial incentives inherent in capitation payment cause concern about underprovision of services and adverse effects on patient management and health. In addition, these studies have not examined the care of elderly people. The regulations implementing the Tax Equity and Fiscal Responsibility Act of 1982 (Public Law 97-248) (TEFRA) call for PROs to review the care provided by HMOs and CMPs. However, there is little experience in quality review and assurance regarding underprovision of services.

Under this option, HCFA would be required to fund demonstration projects that would evaluate alternative methods of assuring quality in risk-sharing plans. Medicare could test the potential applicability of quality assurance and case management techniques now being developed and used in the private sector. These activities could also draw on the knowledge of likely quality problems that is being gained in the current evaluation

of Medicare demonstrations of capitation payment. Methods could then be identified to monitor and correct such problems. The insight gained during the demonstration projects could be applied to quality assurance in risk-sharing plans or under geographic capitation, if Medicare chose to adopt that approach.

A drawback of this option is that PROs, or their designated representatives, might acquire similar knowledge at less expense in the course of reviewing the care provided by HMOs and other CMPs. It might then be simpler and cheaper to rely on existing organizations and stipulate that the knowledge gained be evaluated and disseminated among PROs and other interested organizations.

Payment Based on Fee Schedules

Basing payment for services on fee schedules would address several of the problems currently perceived within CPR: variations in approved charges, unpredictability of payment amounts, confusion on the part of beneficiaries and providers, and limited Government control over rising price levels for physician services.

Because under a fee schedule a single fee is paid for a specific service to any physician within a particular peer group in a particular jurisdiction, variations in approved charges are eliminated within that peer group and jurisdiction. In extreme form, a national fee schedule that did not include specialty distinctions would provide a single payment rate for a specific service for all physicians in all parts of the country. More likely forms of fee schedules would involve some geographic distinctions (e.g., state- or carrier-wide fee jurisdictions), and specialty distinctions could also be retained under a fee schedule.

Because Medicare's payment rate could be known in advance for both beneficiaries and physicians, there would be much less uncertainty about beneficiary coinsurance liability and physicians' expected Medicare receipts. Physicians' billings could proceed on a more expeditious basis because Medicare payment amounts could be better known in advance. A fee schedule could also enable Medicare beneficiaries to become better buyers because the amount of any unassigned liability would be easier to establish in advance and some beneficiaries could be expected to search for physicians who provided a specific service "at the Medicare fee" or to request their usual physician to provide the service at that price.

Given a fee schedule system of payment, a single parameter could be used to revise the level of payments to take account of changes in the costs of producing physician services and perceived changes in the value of those services. Even under a relative value system with multiple conversion factors for the various types of physician services, a fee schedule would give Medicare potentially greater control than CPR of the level of and increases in approved charges. In fact, in the absence of changes in the mix of services, a fee schedule updated with the Medicare Economic Index could be expected to exhibit lower increases in average approved charges than the

CPR system with the Medicare Economic Index because under CPR only some of the *maximum* approved charges are constrained; *average* approved charges under CPR can increase at a faster rate.

Because the circumstances that underlie correct relative approved charges are dynamic, one would want the fee schedule system to have a mechanism for responding to changes. Geographical and specialty differentials and the approved charges of new procedures could be reviewed over time to determine whether changes in payment rates were appropriate.

Adoption of payment based on fee schedules does not imply a particular change in the level of Medicare average payments per service, although there would be more interest in a conversion expected to reduce expenditures than in one that was budget neutral. A change that reduced the rate of growth in average approved charges might also have the effect of stimulating efficiency in the production of individual physician services. However, given the incentives of fee-for-service payment, inefficiencies would be likely to remain in the combination of services used for a medical condition.

Concerns about increases in the volume of services billed would arise under fee schedules or any other fee-for-service reform if Medicare payment levels were more constrained. In addition, a conversion to fee schedules would increase payment rates to some physicians and lower them to others, compared to CPR. Physicians who experienced a decrease might attempt to recoup perceived lost revenues by providing or billing for additional services or substituting services with higher approved charges, with no countervailing decreases in service volume by physicians who experienced increases in approved charges. If this occurred, payment by fee schedule might lead to higher Medicare expenditures. For this reason, additional efforts to monitor use and to control unwarranted utilization increases might be necessary. In addition, collapsing procedure codes within a fee schedule might prevent increases in billing for additional services or upgrading of services billed. The experience in Quebec, which collapsed visit codes and incorporated payments for common laboratory tests in the office visit fee, suggests that these changes can check increases in use and total expenditures under a fee schedule (1).

A fee schedule could be used to determine reimbursement in several ways that are not mutually exclusive. Any or all of these alternatives might also be combined with an expenditure cap, which could be implemented by either disallowing claims above the cap or by discounting claims until there was a reasonable expectation that the cap would not be exceeded. A fee schedule implemented as a schedule of maximum allowances would set upper bounds on approved charges for specific services. The approved charge for any service would be established as the lower of the physician's billed charge or the fee schedule amount. Under another alternative, mandatory assignment, the approved charge would be deemed payment in full and physicians would be prohibited from billing above the Medicare allowance. A third alternative would involve payment of only the fee schedule amount regardless of the physician's actual billed charges. Because the beneficiaries would be responsible for paying for the difference between the physician's

bill and the Medicare allowance, beneficiaries would have a substantial incentive to seek physicians with low charges.

Option 10: Mandate the Medicare program to construct fee schedules for physician services.

Three major variations have been identified to construct fee schedules, either because of ease of their implementation or current professional interest in their development: using historical charge data, developing a relative value scale (RVS) by estimating the resource costs associated with each specific physician service, and developing an RVS or a fee schedule with physician involvement. A blend of these and other options would be possible, for example, using historical charge data to develop fee schedules, but addressing payment differentials among certain services or payment rates for new procedures through an analysis of resource costs and physician advice.

Option 10A: Mandate the Medicare program to construct fee schedules for physician services based on historical charge data maintained by Medicare carriers.

Creating fee schedules from carrier data on physician charges for specific procedures would be a viable short-term option. Average approved charges for each service could be computed from each carrier's beneficiary history data files. The average approved charge would establish the Medicare fee schedule amount for that service within a carrier jurisdiction. Carrier-specific fee schedules would probably be fairly consistent across the country in terms of relative fee levels within jurisdictions if not in absolute levels. Nationally, there is substantial correspondence in relative values among carriers and little difference among relative value scales based on prevailing charges, median billed or approved charges, or average billed or approved charges.

In all likelihood, the initial fee schedules created under this option would have to be State or locality specific, because merging the data across carrier jurisdictions would be difficult in many instances because of differences in data recording techniques and billing conventions. However, this problem might actually ease the transition from CPR to a fee schedule, because for most physicians, the resulting approved charges for any procedure would not be significantly different from previous payments for that procedure.

The advantage of this method of establishing fee schedules is its speed of implementation. A potential disadvantage is that the creation of fee schedules derived from charge data would ignore any imbalances in the current structure of charges. If there are discrepancies in relative payment levels between procedural and nonprocedural services, they could become further embedded in any fee schedule based on charges.

A market-oriented variation to this approach that established fee levels below the current averages might be based on physicians' existing patterns of participation in the Medicare. In effect this method would explicitly test

whether sufficient quantities of some services might be procured at levels much below that of the prevailing charge. Under this variation, Medicare would instruct its carriers to identify for each service the *lowest* approved charge necessary to supply a significant fraction of the total volume provided to Medicare beneficiaries. Alternatively, a more stringent approach would be to identify the lowest approved charge that would be greater than or equal to the approved charges of a significant fraction of all physicians providing that service to Medicare. Either of these approaches might be modified to identify the lowest charge needed to acquire a sufficient number of *assigned* services. Determining the approved charge level would be difficult, and beneficiary access would be jeopardized if too low a payment level was established. Studies have confirmed that physicians are responsive to the level of Medicare approved charges but there is no previous research on the issue of beneficiary access to physician services under this type of pricing. A demonstration project could be undertaken to evaluate this approach.

Option 10B: Mandate the Medicare program to construct fee schedules for physician services based on estimates of the resource costs associated with each procedure.

The considerable attention given to estimations of resource costs as the source of an RVS is to be expected, given the common perception that price ought to be related to cost. In addition, the controversy over the relative differences in payments for procedural and nonprocedural services originates in a comparison of the relative efforts in physician time between office visits and some of the more technical services. It is argued that if relative payment levels were based on costs, the disparities would disappear, removing potentially inappropriate incentives that may influence physicians' clinical decisionmaking.

Under most suggested approaches, resource cost estimates would be derived from time and motion studies or other data on actual resources used by actual physicians. These data would also be adjusted to reflect differences among physicians in the length of required training and in overhead expenses and differences among services in complexity or urgency. The resulting resource-cost-based relative values would then be converted to a fee schedule by determining the level of a monetary conversion factor.

The difficulties and costs associated with such an approach should not be underestimated. There are 7,040 different physician services identified in the HCFA Common Procedure Coding System. In theory, all would require resource cost estimates. As an alternative, resource cost estimates for selected services could be used to "anchor" existing alternative relative values for related services, such as those implicit in charge data, until a complete set of resource costs became available. Even estimating the resource costs of only a few services would require considerable time and effort.

In addition, many believe that the search for an objective set of resource costs is chimerical. Two physicians may produce the same service at two different costs without either one of them being inefficient. Two physicians

may produce two different services at identical cost, yet if one is produced efficiently and the other not, a resource-cost-based approach might reward the inefficient producer. Further, the costs of producing a particular service can be expected to drift to the level of the payment for that service whether that level is higher or lower than that of cost. If payment is below cost for some physicians, they will discontinue providing the service, and hence costs will appear to fall. If payment exceeds costs, costs can be expected to rise as a result of either competition among physicians in quality enhancements or a lack of price-sensitive purchasing by physicians for the resources used to perform those services.

Option 10C: Mandate the Medicare program to elicit physician professional input to construct fee schedules based on:

- *a consensus among physician groups with respect to the relative values of individual procedures, or*
- *negotiations between the Medicare program and provider groups for the specific purpose of establishing Medicare fee schedules.*

Consensus development methods could be used to formulate relative values. This approach might focus more directly on differences between services in terms of the physician efforts and other professional resources that they require. The nonphysician costs of operating physicians' practices have been estimated at 40 percent of gross professional revenues with no extraordinary differences across specialties (2), implying that direct physician costs are 60 percent of the costs of producing physician services. Consensus relative values might approximate resource costs, obviating the requirement for detailed data collection.

Development of consensus relative values by physicians would take advantage of physicians' familiarity with the range and frequency of possible situations in which certain services may be performed. In addition, physician input might facilitate cross-specialty comparisons that might be difficult for the nonphysician or that might not be readily apparent in any subsection of an RVS prepared by a particular specialty. Other participants, such as nonphysician providers, representatives of other third-party payers, and Medicare beneficiaries, could also be included in the process of establishing relative values. The process of explicitly eliciting physician and other professional input into the RVS construction process would enhance the acceptance of the final fee schedule(s) derived from this RVS.

The time required for a complete examination of physician services' relative values could be considerable. Further, based on previous reviews, a new set of consensus relative values would be unlikely to differ much from existing sets of relative values or those relative values that are implicit in current charge-based payments (13).

Fee schedules for government health insurance programs in other countries have been developed through explicit negotiations with physician associations. In Canada, for example, where separate negotiations are conducted in each of 10 provinces, real per capita expenditures on physician services increased 17.8 percent between 1971 and 1982 compared to 46.1 percent

in the United States. In Quebec, reputed to be the most stringent with respect to fee negotiations, the increase was 15 percent below the Canadian national average (1).

In such countries, the focus of negotiations is price per relative value unit from an existing RVS. In the United States, there is no single, consensus RVS, although various editions of the California Relative Value Studies and their progeny remain in circulation. Some effort would have to be made to identify a definitive RVS for conducting negotiations. An RVS based on current Medicare average approved charges could be constructed, but there would be some controversy over its use as a starting point for negotiations given the perception of imbalances in existing fees.

Another hurdle in proceeding to negotiations would be the identification of negotiating groups to represent physicians. HCFA could select a panel of physicians for this process, perhaps by choosing from among physicians nominated by national associations of physicians, but those physicians' authority as negotiators would be uncertain as would any claim as to their representativeness. There is no history in this country of such negotiations, nationally or locally, that might guide the drafting of legislation to foster the development of such groups.

Payment for Packages of Services

Payment for packages of services would put providers at financial risk for the use and cost of services by giving them a fixed payment for a set of related services. Packages of services for payment purposes could range in scope from a visit or procedure to all physician, ancillary, and possibly facility services associated with a particular episode of care.[10] An ambulatory-visit package adjusted for diagnosis would include all physician and ancillary services related to one visit. Building on the global fee now paid to surgeons for certain procedures, a special-procedure package would include ancillaries and the services of all physicians associated with a single diagnostic or therapeutic procedure, such as a magnetic resonance imaging (MRI) scan, extracorporeal shock wave lithotripsy (ESWL), or cataract surgery. A package for an ambulatory episode of care would include all physician and ancillary services associated with an ambulatory episode, whereas a package for an inpatient episode of care would include the services of all the physicians associated with a hospitalized patient. A package for a total episode of care would encompass all ambulatory and inpatient physician services and ambulatory ancillaries associated with the overall episode.

Although payment for packages of related services is similar to the global fee paid to surgeons for all of their services connected with cataract surgery or other procedures, there is no experience with payment for packages that include the services of more than one physician. Because of the lack of experience and, in some cases, usable payment categories, the op-

[10]As a precursor to payment for packages of services, codes for certain services could be collapsed and common laboratory tests included in the visit rate (see option 2).

tions within this strategy call for research to develop categories or demonstrations to evaluate the effects of packaged payment.

Providers receiving a fixed amount for a package of services would have a financial incentive to refrain from using resources whenever possible and to use the least expensive ancillary services, referral physicians, and, when applicable, facilities. Mandatory assignment would be necessary with packaging to prevent providers from passing that financial risk back to Medicare or on to the beneficiary by billing for amounts in addition to the packaged rate. In contrast to the present situation, the concern about quality of care within packages would be that services would be underused or of inferior quality. Access could also be problematic if the variation in the costs of treating expensive patients was not adequately reflected in the case-mix adjustment. In that case, physicians might refuse to treat beneficiaries with complicated and possibly expensive conditions.

The cost to Medicare and to society would depend on the extent to which providers shifted care outside the package and shifted more expensive beneficiaries to other payers. Beneficiaries' costs could increase, decrease, or remain the same. If the packaged rate was set at the mean, the coinsurance of beneficiaries with less costly care would rise, while that of beneficiaries with more costly care would fall. Beneficiaries' cost-sharing liability might rise if physicians shifted care outside of the package.

Payment for packages of services would encourage efficient use of resources within packages, but not across packages. Expensive technologies, such as MRI and ESWL, would be more likely to be regionalized if their services were included in a package. Because MRI is so expensive, its use within a package would be more likely than at present to be limited to conditions for which its efficacy had been demonstrated. To the extent that ESWL obviated more expensive procedures (such as open surgery on the kidney) that were included within the same package, ESWL would be more likely than at present to be used within that package. Clinical laboratory procedures might be used more efficiently, but not if their use could be spun off into out-of-package care. In general, payment for packages would encourage the development of technologies that saved physicians' time, such as new surgical or diagnostic procedures.

One of the major uncertainties regarding packaging is how physicians would handle the distribution of the packaged payment rate among several physicians who participated in a case. The primary physician would in a sense act as a general contractor for the services of other physicians and health professionals, such as anesthesiologists or nurse anesthetists and assistant surgeons. The recipient of the packaged payment rate would have to negotiate with other providers concerning the availability and price of their services. The primary physician would also bear financial risk for these services. Even with mandatory assignment, unless case-mix adjustment was adequate, physicians might avoid seeing more complicated and expensive patients or might request out-of-package payment for them.

Option 11: Mandate the Medicare program to investigate paying a packaged rate for selected special procedures.

A special procedure package would incorporate physicians' services and ancillaries related to a single diagnostic or therapeutic service. Physicians would then have an incentive to consider cost in deciding about the use of ancillaries, assistant surgeons, or particular anesthesiologists. A package for MRI or ESWL, for example, would incorporate physicians' charges, the MRI or ESWL procedure, and any visits. A cataract surgery package would pay the attending physician for the procedure and followup care, anesthesiologist services, and ancillary services. The facility cost could also be included in the package amount, an addition that would encourage use of the least costly setting, whether in an inpatient or ambulatory facility.

To the extent that physicians found packaged payment for special procedures similar to present arrangements, the change in payment method would be more acceptable to them. Costs and utilization would be controlled within special-procedure packages, because physicians would receive a fixed payment and would not receive additional revenue for providing extra services. If policymakers decided that packaging is a reasonable payment alternative, packaging small segments of the system would be easier to implement initially.

However, more complicated patients whose care was likely to be more expensive than the packaged rate might receive poor quality care. Payment for a package contains incentives discouraging the use of ancillary and referral services. Unless case-mix adjustment was adequate, the coordinating physician would have a financial incentive against obtaining consultations for diabetic patients having cataract surgery, for example. In addition, as would be the case with payment for other packages, new professional relationships would have to be created. Since only small portions of the system would be controlled, utilization and expenditures could rise for other procedures and out-of-package care. And excluding the facility cost would provide physicians with no incentive to choose the most cost-effective site.

Option 12: Mandate the Medicare program to conduct further research to define episodes of care, both ambulatory and total episodes, and to develop case-mix measures appropriate for physician payment purposes.

Currently, no defined episode categories exist for payment purposes. Defining episodes of care would give Medicare the option of moving away from a fee for each service toward fees for groups of services. Examining episodes of care would also aid evaluation for utilization review or quality assurance of the components of the care process, including outcomes and efficiency of diagnostic treatment.

Different categories would have to be defined for episodes of preventive care, chronic care, and acute care because of the variability of resource use among the types of care. In addition, classification systems would have to

take into account that principal diagnosis is more definite in the inpatient setting than in the ambulatory setting. For total episodes of care, case-mix classification systems that encompass the totality of patient care would have to be developed because there is no coordinated system for both ambulatory and inpatient services.

Option 13: Mandate Medicare demonstration projects to pay for physicians' inpatient services by diagnosis-related groups (DRGs).

Medicare's prospective DRG-based payment system gives hospitals a financial incentive to control the use and cost of services provided to inpatients. As a result of this payment system, physicians may feel pressured by hospital administrators to constrain orders for ancillary services and to limit patients' lengths of stay. But physicians have no direct financial incentive to consider price and cost when ordering the consultative services of other physicians and health professionals. In order to provide such incentives, Medicare could use DRGs to pay for inpatient physician services. Payment by DRGs could be applied to only hospital-based physicians (radiologists, anesthesiologists, and pathologists) or to attending and consultative physicians as well.

Option 13A: Mandate a Medicare demonstration project to pay for hospital-based physician services as part of hospital DRGs.

Under current payment arrangements, attending physicians and hospital administrators have little incentive to consider the costs of hospital-based physicians who provide anesthesiology, pathology, or radiology services to individual patients. If payment for the services of hospital-based physicians were incorporated into current DRG payments made to hospitals, hospital administrators would have more of an incentive to encourage attending physicians use the services of these hospital-based physicians more efficiently or to substitute, where possible, the services of other less expensive health professionals.

Physician services that relate to a hospital or patient population as a whole, such as managing a clinical laboratory, are already paid as part of the hospital's DRG payment (Social Security Amendments of 1983, Public Law 98-21). In addition, tests that do not require the direct services of a pathologist are paid under Part A. If policymakers deem payment by DRGs for all inpatient services a reasonable alternative, this option would be a step in that direction.

Under this option, hospitals would wish to negotiate contractual arrangements with hospital-based physicians, namely, radiologists, anesthesiologists, and pathologists, to provide services at lower cost. In fact, precedent exists for such contractual arrangements. And until TEFRA, hospitals could bill Medicare for the services of pathologists and radiologists. Relative to other specialties, the hospital-based specialties have high incomes, and the gap appears to have widened in recent years (27).

Incorporating payment for physicians' services provided by the three hospital-based specialties into the hospital DRG would encourage these physicians to provide care in other sites and perhaps to non-Medicare patients. The extent to which these physicians could afford to change their involvement with Medicare would depend on the extent of practice revenue gained from these patients. In 1981, when all physicians on average collected 17 percent of gross practice income from Medicare, radiologists collected 28 percent, anesthesiologists 22 percent, and pathologists 21 percent (24). Thus, a substantial portion of revenue for the three specialties would be affected if Medicare patients were not seen. Furthermore, radiologists and pathologists have had higher assignment rates than any other specialists. Although anesthesiologists have had lower rates than general surgeons, the assignment rates of anesthesiologists have been as high as surgical specialists overall (33).

In the absence of research examining the effect of incorporating payment for the services of hospital-based physicians into hospital DRGs, there are few data on which to base a change. If a demonstration project were funded, however, few physicians might volunteer for it. Although radiologists, anesthesiologists, and pathologists have been singled out for changes in payment under previous legislation, such as TEFRA, questions of equity might be raised. Thus, it might be necessary to incorporate payment for hospital-based physicians' services in hospital DRGs without a demonstration or to offer certain benefits for participation in the project.

Option 13B: Mandate a Medicare demonstration project to pay for all inpatient physicians' services by physician DRGs.

Medicare could fund a demonstration project to pay for inpatient physician services by physician DRGs. Physician DRGs could be applied to all inpatient care or only to surgical inpatient care. The demonstration could experiment with different recipients of payment, such as the attending physician, the medical staff, the hospital, or a combined hospital-medical staff entity. Mandatory assignment would be necessary for these demonstrations so that physicians would face a fixed budget constraint and so that they would be unable to accept assignment only for the less costly cases.

The recipient of payment would have an incentive to carefully evaluate and to reduce the use of physician services within these inpatient-episode-of-care packages. Since this package would apply only to the inpatient portion of the system, ambulatory use and expenditures might rise. This option might encourage underuse of inpatient consultative services to the detriment of patients. If case-mix measures or payment policies did not adequately reflect severity, physicians might choose to see only uncomplicated and less expensive patients. This payment approach could also create confusion and administrative complexity if the physician DRG categories differed from the hospital DRG categories or if another system replaced payment by hospital DRGs.

Medicare could fund a demonstration project to pay only for inpatient surgery by physician DRGs, while using CPR or a fee schedule for medical services. Some researchers consider physician-related charges in surgical DRGs to be relatively homogeneous (21). But others report that although relative to average charges, charges within surgical DRGs appear to be less variable than those within medical DRGs, the standard deviations (absolute variability) are greater for surgery (43).

Since this inpatient-episode-of-care package would apply only to surgical services in the inpatient portion of the health care system, the use of and expenditures on ambulatory and other inpatient services might rise. On the other hand, payment for surgical DRGs could affect about 22 percent of Medicare's expenditures for physician services[1] (4).

Capitation Payment

Although most Medicare beneficiaries have Medicare pay for their care by fee for service, beneficiaries do currently have the option of having Medicare pay for their medical care by capitation. Regulations to implement TEFRA, effective February 1, 1985, established in effect a voluntary voucher system whereby Medicare may pay a predetermined amount to enroll beneficiaries in plans of their choice.

The options below would expand this voluntary system to a mandatory voucher system for all Medicare beneficiaries. Medicare could make capitation payments to two different kinds of fiscal intermediaries: risk-sharing plans, such as HMOs or other CMPs that would provide or arrange for the care of their enrollees; or geographic intermediaries, such as carriers, that would assume the financial risk for the care of beneficiaries in a certain area. In either case, Congress could require that fiscal intermediaries accept Medicare's capitation payment to cover a minimum benefit package. The capitation payment could cover both Part A and Part B services, or it could cover only Part B services, with hospital DRGs retained for Part A services. It is assumed that one of the beneficiaries' options would be to continue to select individual physicians to provide care on a fee-for-service basis. For example, a private insurance company might offer such an arrangement and accept the capitation payment as the premium.

In an era of concern about containing medical expenditures, capitation payment has the advantage of having shown that it can reduce expenditures for care, apparently without compromising quality (18,19). Medicare program expenditures would be much more predictable and controllable under capitation payment than under any of the other payment alternatives. Under a mandatory voucher system of capitation payment, beneficiaries' costs would be likely to fall if plans, as now, were required to share savings with beneficiaries in the form of increased benefits or reduced premiums. On average, beneficiaries' costs would not rise unless Congress decided to increase their financial liability under the Medicare program.

[1]In 1981, 25 percent of Medicare physician expenditures was for surgical care, and over 90 percent of Medicare's payments for surgery was for inpatient services (4).

However, there is little experience with prospective capitation payment for elderly people in general or for Medicare beneficiaries in particular. How elderly people would fare under risk-sharing plans—whether they would have difficulty choosing and enrolling in plans, gaining access to physicians in large organizations, or receiving appropriate care—is not known. Furthermore, studies of capitation have pertained almost entirely to the experience of large established prepaid group practices, which may differ substantially from the experience of newer plans, which tend to be smaller and differently organized. Medicare demonstration of capitation payment, which have enrolled substantial numbers of beneficiaries since they were funded in 1982, will provide information to address these issues. HCFA has funded an evaluation of these plans. Results are being compiled and will become available over the next 2 years.

The amount of a capitation payment is fixed in advance and is independent of the services actually used. Under capitation payment, the recipient of payment instead of the Medicare program or beneficiary bears the financial risk for covered services. Since enrollees of capitation plans have little or no cost-sharing when services are used, they face little financial deterrent to seeking care and have been more likely than other insured people to have at least one physician visit during a year (18). On the other hand, a plan that receives little or no extra revenue from additional services has no financial incentive to provide them. Like those paid fee-for-service, recipients of capitation payment have an incentive to perform individual services efficiently. But unlike fee-for-service payment, capitation payment also gives recipients an incentive to use the most efficient number and mix of services to manage a patient's condition. To the extent that services add more to cost than to revenue, providers on a fixed budget also have a financial incentive against providing additional services. The countervailing incentive is that plans may lose enrollees who become dissatisfied.

If the capitation payment did not cover Part A services, payment recipients would have increased incentives compared to the present to hospitalize patients. Diagnostic and therapeutic procedures could thereby be performed while the plan incurred the cost only of physician services. These incentives would be compatible with those of hospitals paid by DRGs, because hospitals desire additional admissions and profit from low-cost cases in a given DRG. If capitation payment covered only Part B services, possibly unnecessary admissions would warrant particular attention by the PRO.

Capitation payment to organizations acting as fiscal intermediaries rather than to individual physicians buffers the incentive to underuse services. The bases on which the fiscal intermediary distributes revenue to individual physicians and other providers determine where the financial incentives of capitation payment fall. Providers who are paid by capitation or who share in a risk pool for referrals of ancillary or specialist services have a financial incentive to use judiciously and even underuse the services for which they are at financial risk. Providers paid fees for services have an incentive to provide additional services if the extra revenue exceeds the extra cost. Salaried payment promotes neither overuse nor underuse, but, unlike fee-for-

service payment, does not by itself contain incentives for providers to use their time productively. In practice, the majority of physician groups paid mainly by capitation have had explicit productivity guidelines, perhaps to compensate for the financial incentives of salaried payment to physicians (14).

Option 14: Amend the Social Security Act to pay for the medical care of all Medicare beneficiaries by capitation payment.

Although voluntary beneficiary enrollment in risk-sharing plans has been increasing dramatically in recent months and by December 1985 encompassed about half a million people or 4.2 percent of all beneficiaries (38), this route to national capitation payment is likely to be gradual and slow. In the meantime, the Medicare program would not be able to take advantage of the predictability of total annual expenditures and of possible cost savings from widespread capitation payment.

This option would establish a mandatory voucher system for Medicare beneficiaries. Medicare would pay to the plan chosen by a beneficiary a capitation payment to cover care provided during a certain time period. The choice of plans could be expanded beyond present HMOs and other CMPs to include PPOs and traditional insurers that were willing to provide the minimum benefit coverage for the capitation payment. HCFA or another part of the Department of Health and Human Services could certify a plan's financial viability. This option would be consistent with Enthoven's Consumer Choice proposal regarding plans that would provide comprehensive care (8) and with the Administration's proposals that beneficiaries be given vouchers and select plans.

Prepaid group practices have lowered total per capita costs 10 to 40 percent compared to comparison plans, primarily because of lower hospitalization rates (18). HMOs have had about the same rates of increase as fee-for-service practices (18,23), suggesting that capitation plans have been able to maintain a lower level of costs over time, despite the introduction of new technologies. A study of enrollees randomly assigned to a prepaid group and given comparable benefits found expenditures 25 percent lower than fee-for-service enrollees with free care, but no significant differences compared to enrollees with 95 percent coinsurance (19). The results suggest that prepaid group practice and high cost-sharing had similar effects on expenditures and hospital use, but that prepaid group enrollees were not so deterred from seeking care (23).

Because the technology of setting capitation rates for different categories of beneficiaries is not well developed, the structure of capitation rates could unintentionally contain incentives for plans to select beneficiaries likely to have lower than average expenditures and to shun higher cost beneficiaries. Because of variations in annual expenditures among beneficiaries, a risk-sharing plan has the potential to suffer great losses or to reap sizable gains. Studies from the mid to late 1970s found that prior expenditures for beneficiaries who enrolled in prepaid groups were significantly lower than

for other beneficiaries. These results may not be generalizable to other plans or to the situation under widespread capitation payment. But depending on risk-sharing arrangements and capitation rates, biased selection, either from beneficiaries' choices or plans' marketing practices, could result in Medicare's paying much more than the actual cost for a low-cost beneficiary and much less than the actual cost for a high-cost beneficiary in a risk-sharing plan. As discussed in option 8, research is underway to refine the AAPCC, which is now used as the basis of capitation payment. A model that incorporates information on prior hospital use has proved superior to others and is being tested in a current demonstration project (17).

Studies have consistently found that practices paid by capitation delivered care of at least as good and usually better quality than comparison groups (7,18). Although no study examined specifically the quality of care to Medicare beneficiaries, the National Medicare Competition Evaluation funded by HCFA is evaluating quality (29). Problems related to timely enrollment and disenrollment have been identified in certain Florida plans, which are part of the evaluation. Quality is of particular concern for Medicare beneficiaries because their medical and social needs may differ from those of employed populations and Medicaid enrollees and may affect their ability to cope with unfamiliar administrative arrangements. However, once a beneficiary becomes familiar with plan procedures, capitation payment would entail less paperwork than fee-for-service payment.

Some observers have theorized that plans paid by capitation would not skimp on treatment of severe illness for which definitive treatment is available, and that they might excel in reassuring worried-well patients. But people who are subtly sick may experience delays in the diagnosis of potentially serious disease if plan physicians face bureaucratic complexities in ordering diagnostic workups or in obtaining tests from outside the plan. In fact, delays in diagnosing colorectal cancer were found for enrollees of a prepaid group compared to fee-for-service patients (10).

Given the incentives of capitation payment, delays might also occur in resorting to a more expensive treatment for a condition for which there were less costly alternative therapies, such as initially using ESWL instead of surgery for renal stones or delaying the removal of cataracts. Delaying surgery might constitute poorer quality care if the person's ability to function was impeded, but delays can have health benefits if the surgery is ultimately avoided or if the diagnosis is refined. Greater delay would be expected in adopting an expensive technology such as MRI while its demonstrated advantages over alternative modalities were fairly limited. As long as use inside the plan was low, the plan would be likely to contract for such services outside the plan.

Risk-sharing plans know in advance the size of the population for which they are responsible and have financial incentives to take advantage of economies of scale in locating and using expensive equipment. These incentives would promote greater regionalization of expensive equipment. There would be incentives to send more tests to centralized clinical laboratories and to perform fewer tests in physician offices. Such a shift has the potential to

Photo credit: General Electric Medical Systems

Expensive technologies with substantial fixed costs, such as magnetic resonance imaging (MRI), would be more likely to be regionalized if their services were included in payment for packages of services or in capitation payment, or if payment rates were lowered under fee-for-service payment.

improve the quality of test results since State standards may be more likely to apply to central laboratories, and appropriately trained technicians may be more likely to perform the tests.

Compared to other insured people, HMO enrollees have had no consistent pattern of vaccinations, preventive technologies considered cost-effective (5). It is unlikely that pneumococcal vaccination, for example, would be higher under capitation because of barriers to use that precede payment.

Option 15: Mandate the Medicare program to fund demonstrations of capitation payment to geographic fiscal intermediaries.

All of Medicare's experience with capitation payment has been with individual plans. This option would require Medicare to try an alternative approach. In the context of demonstration projects, Medicare could pay fiscal intermediaries (for example, carriers or PROs) who were willing to assume the financial risk for beneficiaries' care in a geographic area (5). The intermediary-at-risk could negotiate arrangements with area providers and offer beneficiaries choices. Continuation of present Medicare coverage and cost-sharing provisions would remain an option. Capitation payment would give a geographic fiscal intermediary financial incentives to control expenditures for beneficiaries' care by persuading beneficiaries to choose lower cost alternatives, such as HMO enrollment or PPO providers,

by negotiating discounts with providers in a PPO or HMO, or by pursuing more stringent review of fee-for-service claims (5).

From the perspective of the Medicare program, the problem of establishing equitable rates for different categories of beneficiaries would be mitigated under this option because the intermediary would be at risk for all the beneficiaries in an area. However, random variations in beneficiary expenditures from year to year could entail substantial amounts. It would be possible for Medicare to share the risk with the carrier by paying the carrier a "risk premium," by permitting the carrier to establish a risk stabilization fund to buffer annual gains and losses, or by specifying that Medicare would share a certain percentage of the annual gains and losses. Different arrangements could be tested in the demonstrations.

Even if there were some retrospective adjustments based on actual expenditures, the Medicare program could benefit from being better able to predict total annual expenditures. Beneficiaries might also gain to the extent that plans and providers sought their patronage by reducing cost-sharing liabilities or by increasing benefits.

Demonstrations of capitation payment to geographic fiscal intermediaries would permit Medicare to evaluate the implications of this payment alternative for beneficiaries' access to and quality of care. Both the carriers and providers who were at risk would have financial incentives to control use, perhaps at the expense of quality and access. The experience that Medicare gained from the demonstrations would permit the program to identify problem areas and to design methods of monitoring and assuring quality and access.

Demonstrations would also enable the Medicare program to identify and seek solutions to matters concerning enrollment of beneficiaries, establishing and updating capitation rates, and assignment for fee-for-service providers. Either Medicare or the intermediary could conduct an open enrollment period. One possibility to inject greater competition would be for the geographic fiscal intermediary to contract with HMOs and other CMPs that it did not sponsor and offer them as options to beneficiaries.

Establishing a geographic intermediary-at-risk would vest substantial market power in one entity. Once established, the intermediary would have a strong negotiating position with Medicare because of the difficulty for Medicare if the intermediary opted out after a few years. The intermediary's control over sizable funds would give it great leverage in negotiating with plans and providers. An undesirable consequence would be that the carrier might use its market power to drive out competitors.

Monitoring and assuring quality and access during the demonstration would be important to protect the welfare of beneficiaries. These activities would also be difficult. Past quality assurance programs have concentrated on overprovision of services because of the financial incentives of fee-for-service payment. By contrast, quality assurance under capitation payment would have to be directed toward underprovision of services, a field in which little experience exists (see option 9).

CONCLUSION

Each of the four strategies to change Medicare payment for physician services has advantages, disadvantages, and uncertain implications. Capitation payment under a mandatory voucher system is most likely to be able to control Medicare expenditures without increasing beneficiaries' expenditures. The capitation payment recipient would be at financial risk for the use and cost of covered services. But since the technology of setting capitation rates for different categories of beneficiaries is not well developed, the rate structure could unintentionally contain incentives for payment recipients to seek some beneficiaries as enrollees and to avoid others.

Payment based on fee schedules would give Medicare greater control over price, but changes in total expenditures would depend on changes in the volume and types of services as prices were constrained. Continuing CPR payment and lowering Medicare's approved charges might initially reduce the growth in Medicare expenditures, but this effect would be unlikely to be sustained. Payment for packages of services could theoretically enable Medicare to limit expenditures for packaged services, but total expenditures would depend on the effects of case-mix adjustment and on the extent to which related services were used outside the packages. Moreover, little or no experience exists with payment for packages that include the services of different physicians.

The effects of different payment alternatives on quality of care would depend on the level and unit of payment and on how appropriately services are now being used. Some services, especially procedural ones, such as certain clinical laboratory services and some surgeries, now tend to be overused. If reductions in the levels of payment and more global units of payment led to lower use of such services, quality could be enhanced. On the other hand, quality would fall if lower payment levels or revenue constraints led to reductions in services and delays in diagnosis and treatment that hurt beneficiaries' health.

Quality assurance is a concern for all the payment alternatives, but the direction of concern differs for specific alternatives—from overuse of services with fee-for-service payment to underuse with payment for packages of services and capitation payment. As the unit of payment and scope of services become more comprehensive, financial incentives for efficiency apply across a greater range of services, and incentives for underuse and concern about adverse effects on quality of care also increase. Under both capitation payment and payment for packages of services, providers that underserve beneficiaries run the risk of losing patients to other practices. Although capitation plans have apparently provided medical care at lower cost while maintaining quality at levels equal to or better than comparison practices, it is uncertain whether new plans, which differ in size, sponsorship, organization, and risk-sharing arrangements, will achieve similar results.

Since assignment rates decline with lower payment rates, lowering approved charges under CPR would decrease beneficiaries' financial access

to the physicians or services affected. Payment for packages of services would require mandatory assignment, whose effect on access is uncertain. Capitation payment has reduced enrollees' direct financial barriers to securing care, but new plans might differ in coverage of services and cost-sharing provisions. The ongoing evaluation of capitation plans with Medicare enrollees will indicate whether beneficiaries have had difficulty dealing with plan bureaucracy.

There are no documented problems with present access to care for specific beneficiary groups. But an important factor in future access under all of the payment alternatives discussed in this report would be the level of Medicare payment. There is the possibility that if payment rates were pushed too low, providers would increasingly refuse to accept Medicare's payment as payment in full. Some beneficiaries would be able to bear higher out-of-pocket expenses. But poorer beneficiaries would have restricted access to medical care and perhaps untoward effects on their health.

Payment reform that lowers the level of payment or limits the revenue to a provider would encourage the development and use of cost-saving technologies and of less expensive sites of care. Such reforms would also stimulate regionalization of expensive technologies, perhaps with a concomitant decrease in beneficiaries' geographic access. Expensive new technologies, such as MRI, might be adopted more slowly than at present. Within packages and under capitation payment, new cost-increasing technologies would be more likely to be used in cases where their efficacy had been documented. The use of preventive technologies such as pneumococcal vaccination might increase with higher levels of payment or with payment for a designated package of preventive services. To the extent that physicians' and beneficiaries' attitudes toward prevention account for low levels of use of even cost-effective preventive services, however, physician payment reform would not change the use of such services.

The policy options that involve the least change from present CPR payment or that call for research and demonstrations could be undertaken fairly quickly, within 1 or 2 years. This applies to four of the five general options: reducing the number of payment codes, adopting volume controls, mandating assignment, and establishing a physician payment commission. All of the options under the strategy of continuing present payment arrangements could also be implemented in a short time: reducing approved charges and giving beneficiaries the option of PPOs, adopting fee schedules for specific services, increasing funding for research and demonstrations on capitation rates, and funding demonstrations of quality assurance under capitation payment. Fee schedules for the strategy of payment based on fee schedules could also be constructed quickly if they were based on carriers' historical charge data. All of the options in the strategy of payment for packages of services could be undertaken in a short time, because they all relate to developing further information on packaging: investigating payment for special-procedure packages, conducting research on episodes of care and case-mix measures, and instituting demonstration projects to pay for inpatient physician services by DRGs. Within the strategy of capita-

tion payment, a demonstration of capitation payment to geographic fiscal intermediaries could begin in the near future. HCFA is currently funding or examining most of the research and demonstration projects discussed in the options. What Congress would gain by mandating certain avenues of research or demonstration is an emphasis on a certain payment strategy.

Options that depend on further analysis, especially regarding resource costs and relative value scales, would require a longer period of time to carry out. The general option to reduce payment differentials among certain services and the construction of fee schedules based on estimates of resource costs or physician involvement fall into this category. Capitation payment for all beneficiaries either could be implemented quickly using present payment rates based on the AAPCC or delayed until payment rates were more refined and recent demonstration projects had been evaluated. For the most part, payment for packages of services, as opposed to research or demonstrations on packaging, is not ready to be implemented because payment categories have not been developed or tested.

Although it would be most reasonable for Congress to consider policy options related to the payment strategy that it wished to adopt, it would be possible to adopt other options or strategies while awaiting further information from research and demonstration projects that would guide the ultimate decision. The general options would be consistent with the three payment alternatives that would continue to base payment on individual services or packages of services. Although capitation payment would render moot most of the issues addressed by the general options, it would still be feasible to move from any of the general options to general capitation payment. The options to continue CPR as the mainstream payment method could be undertaken in the same spirit. Within this set of options, Congress could emphasize measures related to an alternative payment method if it was interested in moving in that direction.

The strategy of payment based on fee schedules instead of CPR would also be consistent with ultimately adopting payment for packages of services or general capitation payment. The effort and expense to implement payment changes associated with fee schedules would then have to be repeated for the new payment alternative. But payment based on fee schedules could be a bridge for determining rates for broader packages of services. And under general capitation payment, payment based on fee schedules instead of CPR could be the fee-for-service alternative guaranteed to beneficiaries who wished to continue with that approach.

It would be technically feasible but more difficult to move from some of the packaging options to strategies to adopt other payment alternatives. Paying for some or all inpatient physician services by DRGs would prompt organizational and financial changes within the physician community and within hospitals that would have to be disrupted if payment based on fee schedules or general capitation payment were subsequently adopted. Similarly, it would be possible with additional effort and expense to move from general capitation payment to payment based on fee schedules or payment

for packages of services. But general capitation payment would most likely stimulate both beneficiaries and providers to align with plans, and the substitution of a different payment alternative would be disruptive to those relationships and to the individuals involved.

REFERENCES

1. Barer, M.L., Evans, R.G., and Labelle, R., "The Frozen North: Controlling Physicians Costs Through Controlling Fees," prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, November 1985.
2. Berry, R., "A Review of the Medicare Economic Index: An Analysis of Variations in Practice Costs Among Specialties," *Issues in Physician Reimbursement*, N.T. Greenspan (ed.), HCFA Pub. No. 03121 (Baltimore, MD: Health Care Financing Administration, March 1981).
3. Brook, R.H., Ware, J.E., Rogers, W.H., et al., "Does Free Care Improve Adults' Health?" *N. Engl. J. Med.* 309(23):1426-1434, Dec. 8, 1983.
4. Burney, I., and Schieber, G., "Medicare Physicians' Services: The Composition of Spending and Assignment Rates," *Health Care Financing Review*, forthcoming.
5. Burney, I., Hickman, P., Paradise, J., et al., "Medicare Physician Payment, Participation, and Reform," *Health Affairs* 3(4):5-24, Winter 1984.
6. Cotter, P.S., and Willer, J., "An Analysis of Physician Response to Medicare Participation," Chicago, IL, Sept. 25, 1985.
7. Cunningham, F.C., and Williamson, J.W., "How Does Quality of Health Care in HMOs Compare to That in Other Settings? An Analytic Literature Review: 1958 to 1979," *Group Health J.* 1:4-25, Winter 1980.
8. Enthoven, A.C., *Health Plan: The Only Practical Solution to the Soaring Cost of Medical Care* (Reading, MA: Addison-Wesley Publishing Co., 1980).
9. Etheredge, L., and Juba, D., "Medicare Payments for Physicians' Services," *Health Affairs* 3(4):132-137, Winter 1984.
10. Francis, A.M., Polissar, L., and Lorenz, A.B., "Care of Patients With Colorectal Cancer: A Comparison of a Health Maintenance Organization and Fee-for-Service Practices," *Medical Care* 22:418-429, 1984, as cited in G.T. Hammons, R.H. Brook, and J.P. Newhouse, "Evaluation of Effects on the Quality of Care of Selected Alternatives for Paying Physicians Under the Medicare Program," prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, August 1985.
11. Hadley, J., and Berenson, R., "Seeking the 'Just' Price: Relative Value Scales and Fee Schedules for Physicians' Services," in J. Hadley, D. Juba, R. Berenson, et al., "Final Report on Alternative Methods of Developing a Relative Value Scale of Physicians' Services," The Urban Institute, Washington, DC, October 1984.
12. Hadley, J., and Lee, R., "Physicians' Price and Output Decisions: Theory and Evidence," The Urban Institute Working Paper No. 998-8, Washington, DC, April 1978.
13. Hadley, J., Juba, D., Berenson, R., et al., "Final Report on Alternative Methods of Developing a Relative Value Scale of Physicians' Services," The Urban Institute, Washington, DC, October 1984.
14. Held, P.J., and Reinhardt, U.E., "Prepaid Medical Practice: A Summary of Findings From a Recent Survey of Group Practices in the United States," *The Group Health Journal* 1(2):4-15, Summer 1980.

15. Hsaio, W.C., and Stason, W.B., "Toward Developing a Relative Value Scale for Medical and Surgical Services," *Health Care Financing Review* 1(3):23-38, Fall 1979.
16. Juba, D., "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the Office of Technology Assessment, U.S. Congress, Washington, DC, November 1985.
17. Lubitz, J., Beebe, J., and Riley, G., "Improving the Medicare HMO Payment Formula To Deal With Biased Selection," *Advances in Health Economics and Health Services Research*, vol. 6, R.M. Scheffler and L.F. Rossiter (eds.) (Greenwich, CT: JAI Press, 1985, forthcoming).
18. Luft, H.S., *Health Maintenance Organizations: Dimensions of Performance* (New York, NY: John Wiley & Sons, 1981).
19. Manning, W.G., Leibowitz, A., Goldberg, G.A., et al., "A Controlled Trial of the Effect of a Prepaid Group Practice on Use of Services," *N. Engl. J. Med.* 310(23):1505-1510, June 7, 1984.
20. McMillan, A., Lubitz, J., and Newton, M., "Trends in Medicare Physician Assignment Rates, 1968-1984," *Health Care Financing Review*, forthcoming.
21. Mitchell, J.B., "Physician DRGs," *N. Engl. J. Med.* 313(11):670-75, Sept. 12, 1985.
22. Mitchell, J.B., and Cromwell, J., "Impact of an All-or-Nothing Assignment Requirement Under Medicare," *Health Care Financing Review* 4(4):59-78, Summer 1983.
23. Newhouse, J.P., Manning, W.G., Morris, C., et al., "Some Interim Results From a Controlled Trial of Cost Sharing in Health Insurance," *N. Engl. J. Med.* 305(25):1501-7, Dec. 17, 1981.
24. Owens, A., "How Much of Your Money Comes From Third Parties?" *Medical Economics* 60:254-263, Apr. 4, 1983.
25. Paringer, L., "The Distributional Effects of the Medicare Economic Index on Physicians and Beneficiaries," Urban Institute Working Paper 1306-01-03, The Urban Institute, Washington, DC, July 1981.
26. Payne, B.C., Lyons, T.F., et al., *The Quality of Medical Care: Evaluation and Improvement* (Chicago, IL: Hospital Research and Educational Trust, 1976).
27. Reynolds, R.A., and Ohsfeldt, R.L. (eds.), *Socioeconomic Characteristics of Medical Practice 1984* (Chicago, IL: American Medical Association, 1984).
28. Rodgers, J., Congressional Budget Office, U.S. Congress, Washington, DC, personal communication, July 26, 1985, and Sept. 20, 1985.
29. Rossiter, L.F., Friedlob, A., and Langwell, K., "Exploring Benefits for Risk-Based Contracting Under Medicare," *J. Health Care Financial Management Association*, pp. 1-11, May 1985.
30. U.S. Congress, Congressional Budget Office, *The Economic and Budget Outlook: An Update* (Washington, DC: U.S. Government Printing Office, August 1985).
31. U.S. Congress, Congressional Research Service, *Medicare: Physician Payments*, prepared by J. O'Sullivan, CRS Order Code IB85007 (Washington, DC: U.S. Government Printing Office, Dec. 17, 1984).
32. U.S. Congress, Office of Technology Assessment, *Medical Technology Under Proposals To Increase Competition in Health Care*, OTA-H-190 (Washington, DC: U.S. Government Printing Office, October 1982).
33. U.S. Congress, Senate, Committee on Finance, and House of Representatives, Committee on Ways and Means, Committee on Energy and Commerce, *Background Data on Physician Reimbursement Under Medicare*, S.Prt. 98-106 (Washington, DC: U.S. Government Printing Office, October 1983).

34. U.S. Congress, Senate, Special Committee on Aging, *Medicare: Physician Payment Options*, hearings, Mar. 16, 1984 (Washington, DC: U.S. Government Printing Office, 1984).
35. U.S. Department of Health and Human Services, Health Care Financing Administration, "Medicare Participating Physician and Supplier Program: Fact Sheet," Baltimore, MD, 1984.
36. U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Data Management and Strategy, *Annual Medicare Program Statistics 1982* (Baltimore, MD: HCFA, December 1984).
37. U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Data Management and Strategy, Division of Reports and Analysis, Compiled Carrier Workload Reports, 1985.
38. U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Program Operations, Division of Group Health Plan Operations, Baltimore, MD, personal communication, Aug. 27, Aug. 30, Nov. 8, and Dec. 13, 1985.
39. U.S. Department of Health and Human Services, Health Care Financing Administration, Bureau of Quality Control, Division of Reports and Analysis, Baltimore, MD, personal communication, Dec. 27, 1985.
40. U.S. Department of Health and Human Services, Health Care Financing Administration, Office of Research and Demonstrations, *Health Care Financing Status Report: Research and Demonstrations in Health Care Financing*, HCFA Pub. No. 03202 (Baltimore, MD: HCFA, April 1985).
41. U.S. Department of Health and Human Services, Social Security Administration, Office of the Actuary, September 1982, as cited in U.S. Senate Special Committee on Aging, and American Association of Retired Persons, *Aging America: Trends and Projections* (Washington, DC: American Association of Retired Persons, 1984).
42. U.S. Federal Supplementary Medical Insurance Trust Fund, Board of Trustees, "1985 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund," Washington, DC, Mar. 28, 1985.
43. West, H., Marcus, L., McMenamin, P., et al., *Physician and Hospital Reimbursement Study*, prepared for the U.S. Department of Health and Human Services, Baltimore, MD, Jan. 31, 1985.

NOTE: Copies of the full report "Payment for Physician Services: Strategies for Medicare" can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, GPO stock No. 052-003-01020-8.

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